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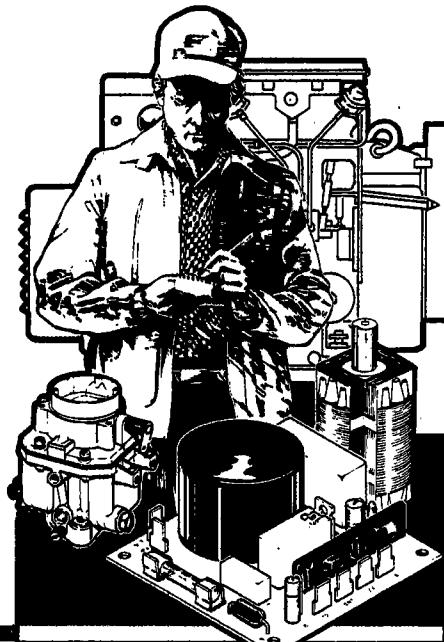
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Onan

Parts Manual

DL6TB

GenSet



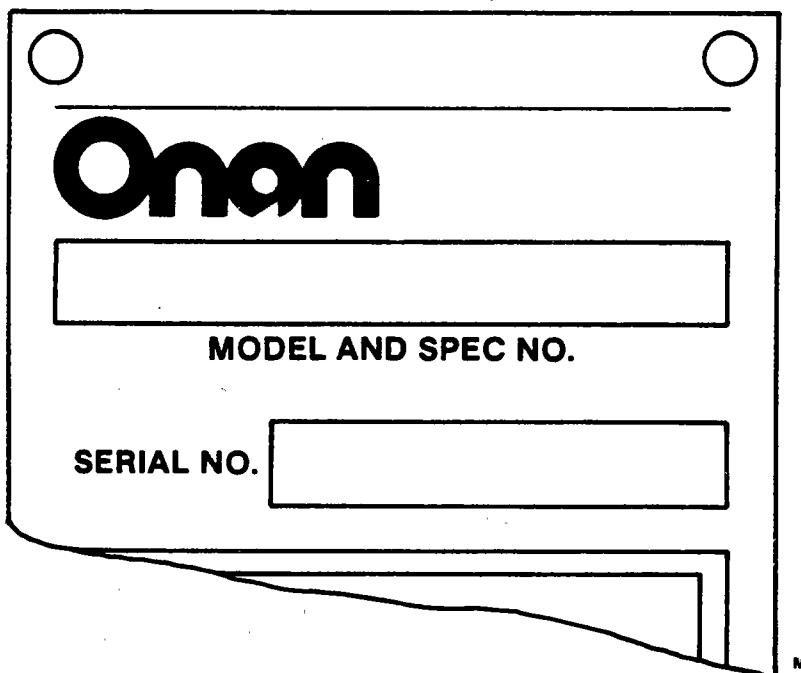
Onan Service Parts

934-0228
2-87 (SPEC A and B)
Replaces
6-84 (Spec A-B)
Printed in U.S.A.

General Information

For parts or service, contact the dealer from whom you purchased this equipment or refer to your Nearest Authorized Onan Parts and Service Center.

To avoid errors or delay in filling your parts order, always give the MODEL, SPEC NO. and SERIAL NO. from the Onan nameplate.



For handy reference, insert "YOUR" nameplate information in the spaces above.

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Introduction

This parts manual applies to the standard generator sets as listed below. Parts are arranged in groups of related items and each illustrated part is identified by a reference number corresponding to the same reference number in the parts list. Unless otherwise mentioned in the description, parts are interchangeable between models. All references in the parts description that pertain to specification letter differences for replacement parts are for the model listed on the identification label affixed to the generator set control. Throughout this manual left (non-accessory) and right (accessory) sides are determined by facing the rear or generator end of the set.

Set Data Table

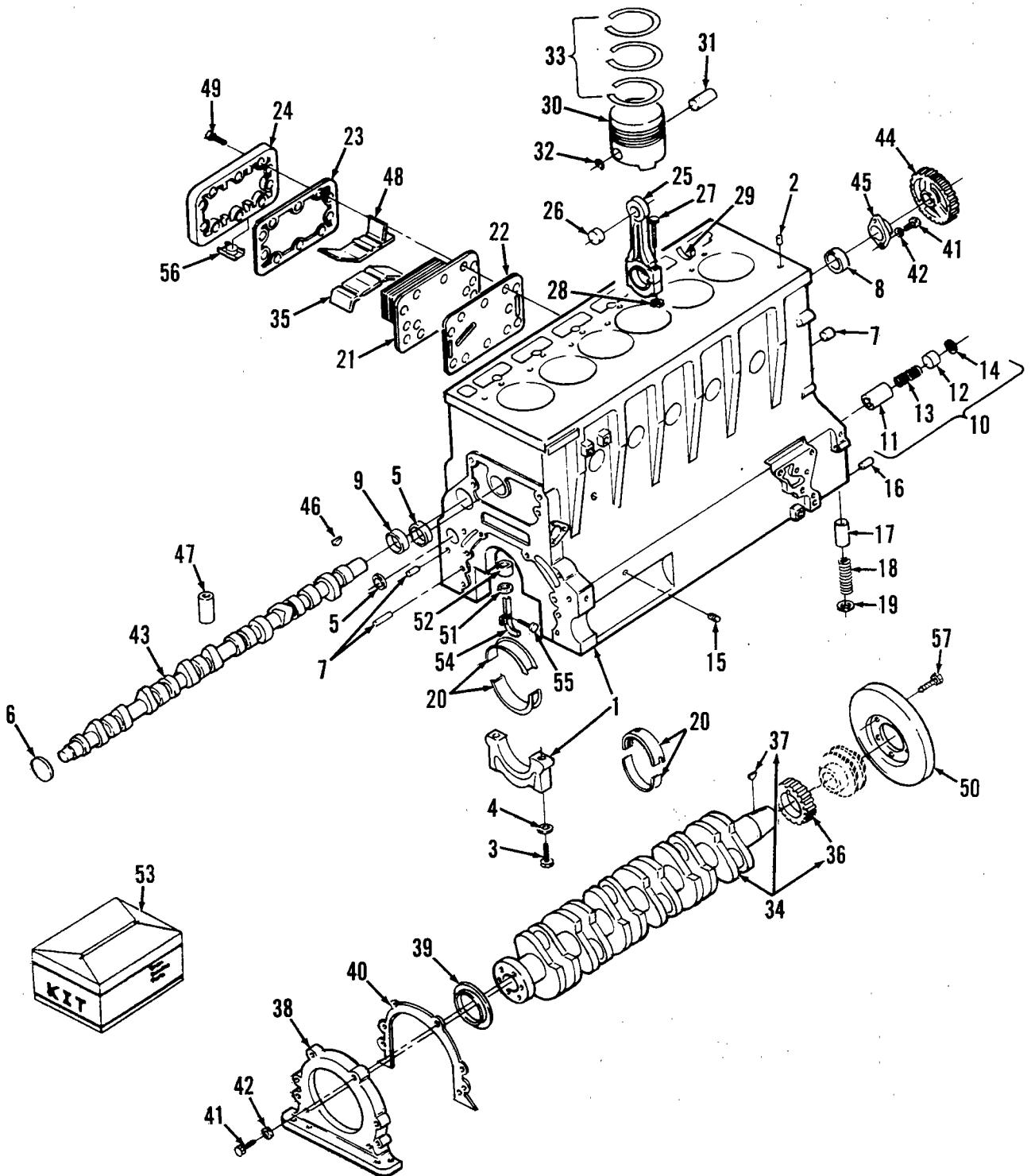
MODEL IDENTIFICATION	RATING	MODEL IDENTIFICATION	RATING
63.0 DL6TB-*/#@	63,000 WATTS	70.0 DL6TB-*/#@	70,000 WATTS

Electrical Data Table

*VOLTAGE CODES	VOLTS	HERTZ	WIRE	PHASE	NOTES
9XR 15R	347/600 120/208 120/240 127/220 139/240 240/416 254/440 277/480 515R	60 60 50	6 12 12	3 3 3	+
	110/190 110/220 115/200 115/230 120/208 127/220 220/380 230/400 240/416 254/440				+

- * - Voltage codes follow model letter designations.
- # - Specification number: Number 1 is standard, all others indicate variations.
- @ - Specification letter: Letter advances (A to B, B to C, etc.) with major manufacturing changes.
- + - These generators are reconnectable, refer to Operator's Manual for wiring data.

Cylinder Block



Cylinder Block

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	110-3297	1	Block, Assembly, Cylinder (Includes Parts Marked*)	30			Piston and Pin Kit (Includes Retaining Rings)
2	110-2978	2	*Pin, Cylinder Head Alignment	112-0221	6		Standard
3	720-1801	14	*Screw, Cap - Hex Head - Special	112-0222	6		0.25 MM Oversize
4	740-1801	14	*Washer, Flat - Special	112-0223	6		0.50 MM Oversize
5			Plug, Cup	112-0224	6		0.75 MM Oversize
	517-0141	6	* 50.8 MM Stainless Steel	112-0225	6		1.0 MM Oversize
	517-0144	2	* 12.7 MM Steel	31	112-0165	6	Pin, Piston
	517-0146	1	* 31.75 MM Stainless Steel	32	518-0409	12	Ring, Retaining - Piston Pin
	517-0250	1	54.37 MM Stainless Steel (Oversize)	33			Ring Kit, Piston
6	517-0140	1	*Plug, Welch (57.15 MM) Steel	113-0261	6		Standard
7			Pin, Alignment	113-0262	6		0.25 MM Oversize
	775-0074	2	* 8 MM x 20 MM	113-0263	6		0.50 MM Oversize
	775-0089	2	* 10 MM x 20 MM	113-0264	6		0.75 MM Oversize
	775-0078	2	* 8 MM x 40 MM	34	104-1576	1	1.0 MM Oversize
8	101-0511	1	*Bearing, Camshaft - Front	35	102-1153	1	Crankshaft and Gear (Includes Key)
9	101-0471	6	*Bearing, Camshaft - Intermediate and Rear	36	104-1138	1	Baffle, Oil Cooler - Bottom
10	123-1613	1	*Valve Assembly, Pressure Relief (Includes Parts Marked +)	37	515-0245	1	Gear, Crankshaft
				38	101-0713	1	Key - Crankshaft Gear
				39	509-0203	1	Plate, Rear Seal (Includes Seal)
11	123-1515	1	+Body, Relief Valve	40	101-0600	1	Seal, Oil - Rear (Includes Wear Sleeve)
12	123-1514	1	+Piston, Relief Valve	41	718-1037	8	Gasket, Rear Seal Plate
13	123-1508	1	+Spring, Relief Valve				Screw, Cap - Hex Head
14	518-0410	1	+Ring, Retaining	42	740-1006	8	(M8 x 25 MM)
15			Plug, Pipe	43	105-0512	1	Washer, Flat (M8)
	502-0153	7	* 6.35 MM - Brass	44	105-0515	1	Camshaft
	505-0274	6	* 3.17 MM - Steel	45	105-0534	1	Gear, Camshaft
16	516-2102	1	*Pin, Regulator Valve Spring	46	515-0245	1	Retainer, Camshaft
17	123-1514	1	*Piston, Regulator Valve	47	115-0275	12	Key - Camshaft Gear
18	123-1511	1	*Spring, Regulator Valve	48	102-1155	1	Tappet
19	740-1004	1	*Washer, Flat (M6)	49	725-1061	10	Baffle, Oil Cooler - Top
20			Bearing Kit, Main (Includes Upper and Lower Bearing Half)	50			Screw, Socket Head (M8 x 80 MM)
	101-0689	1	Front (Standard)	104-1485	1		Damper, Crankshaft
	101-0681	1	Center (Standard)	104-1547	1		3000 RPM
	101-0685	4	Intermediate (Except Center) (Standard)	51	509-0178	6	3600 RPM
	101-0677	1	Rear (Standard)	52	110-3235	6	*Seal, O-Ring
21	102-1120	1	Cooler, Oil	53	168-0173	1	*Sleeve, Cooling Piston
22	102-0973	1	Gasket, Oil Cooler	54	110-3206	6	Kit, Gasket - Lower End
23	102-0975	1	Gasket, Oil Cooler Cover	55	815-0564	6	*Nozzle, Piston Cooling
24	102-1254	1	Cover, Oil Cooler	56	504-0028	1	*Screw, Machine - Buttress
25	114-0313	6	Rod, Connecting (Includes Finished Bearing, Bolts and Nuts)	57	720-1807	6	Head (M6 x 20 MM)
26	114-0316	6	Bushing, Connecting Rod (Semi Finished)				Valve, Coolant Drain
27	114-0315	12	Bolt, Connecting Rod				Screw, Cap - Hex Head
28	114-0318	12	Nut, Connecting Rod				(Special)
29	114-0320	12	Bearing, Connecting Rod - Standard (Half)				

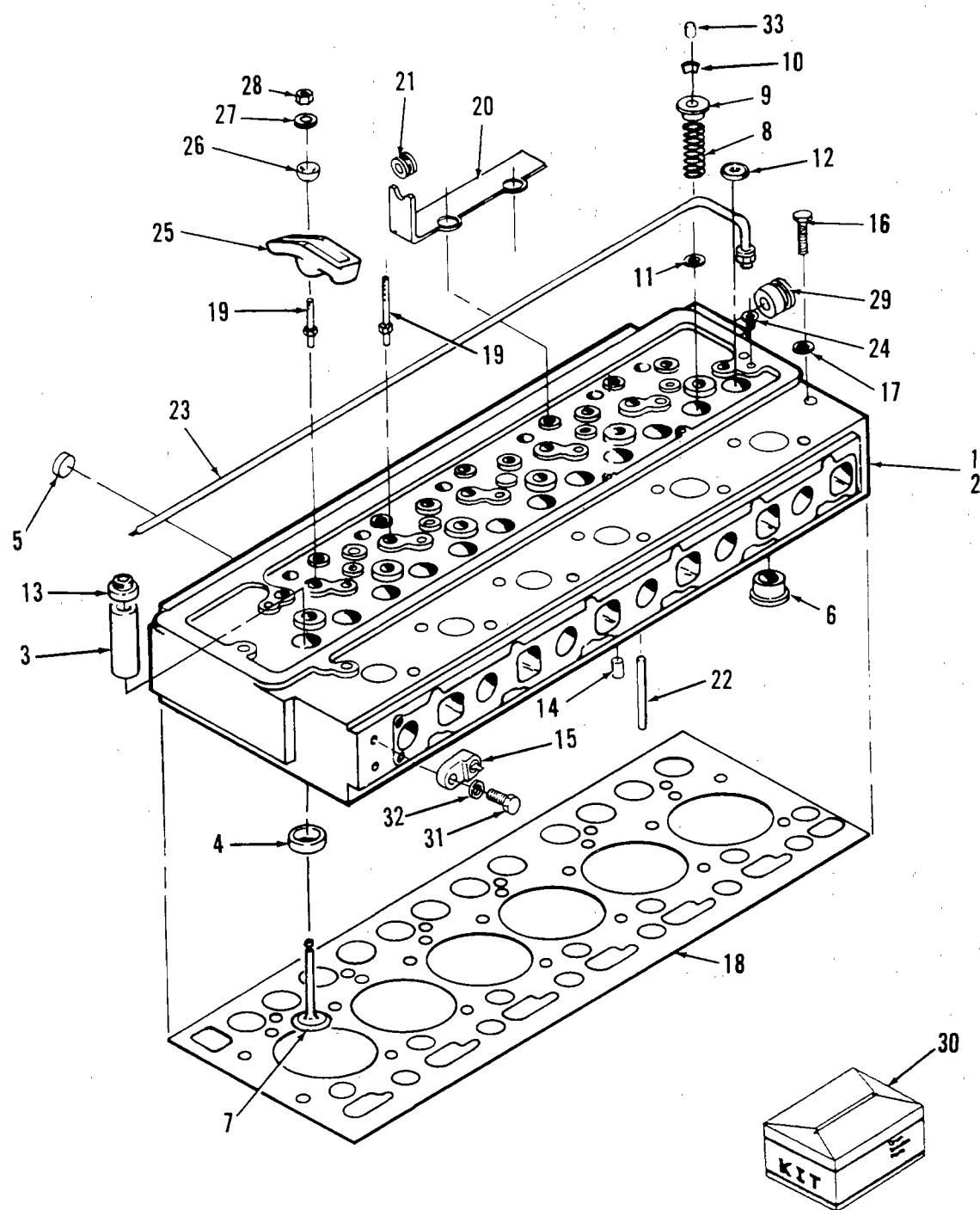
* - Parts Included in 110-3297 Cylinder Block

Assembly

+ - Parts Included in 123-1613 Pressure Relief

Valve Assembly

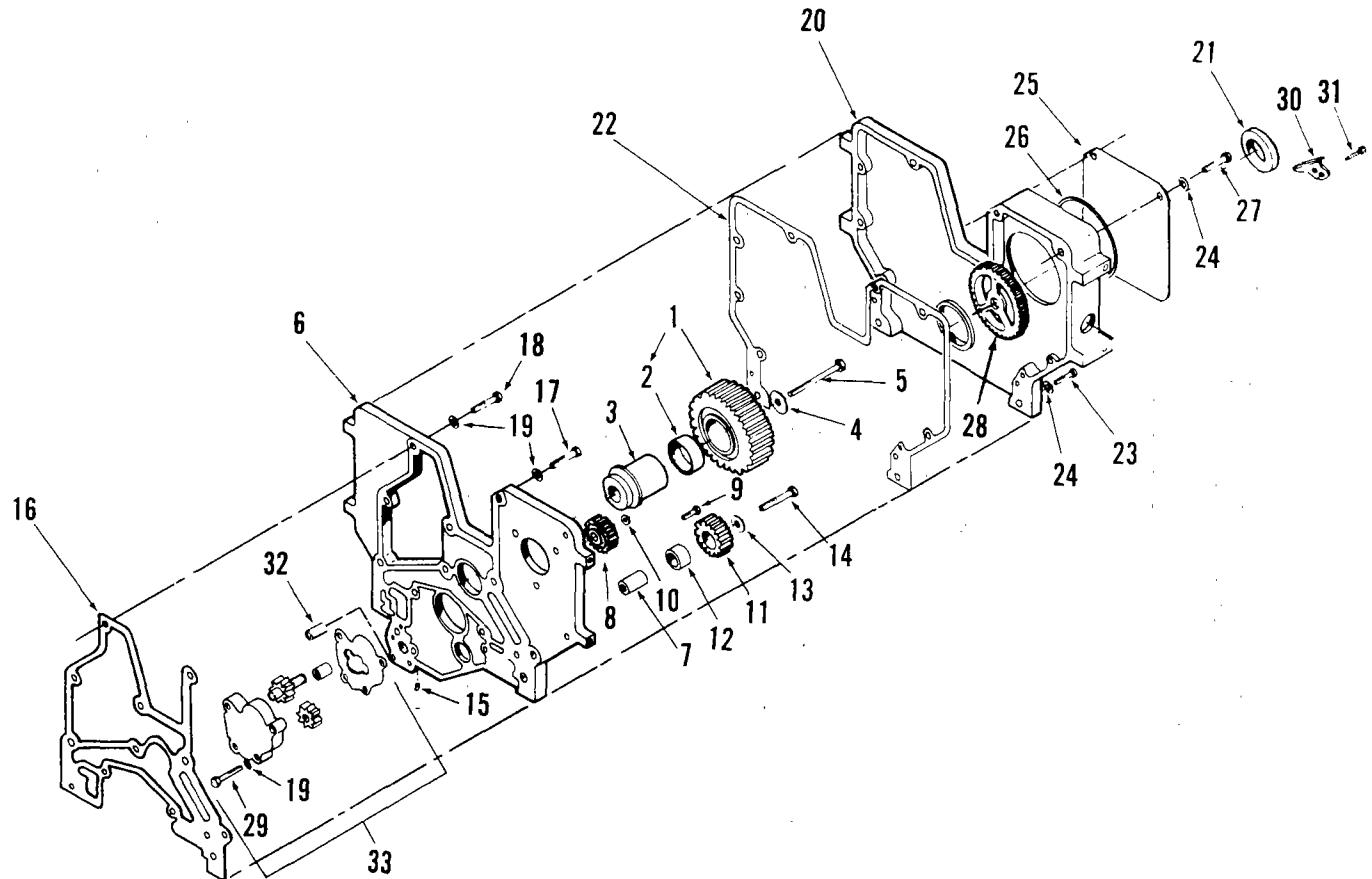
Cylinder Head



Cylinder Head

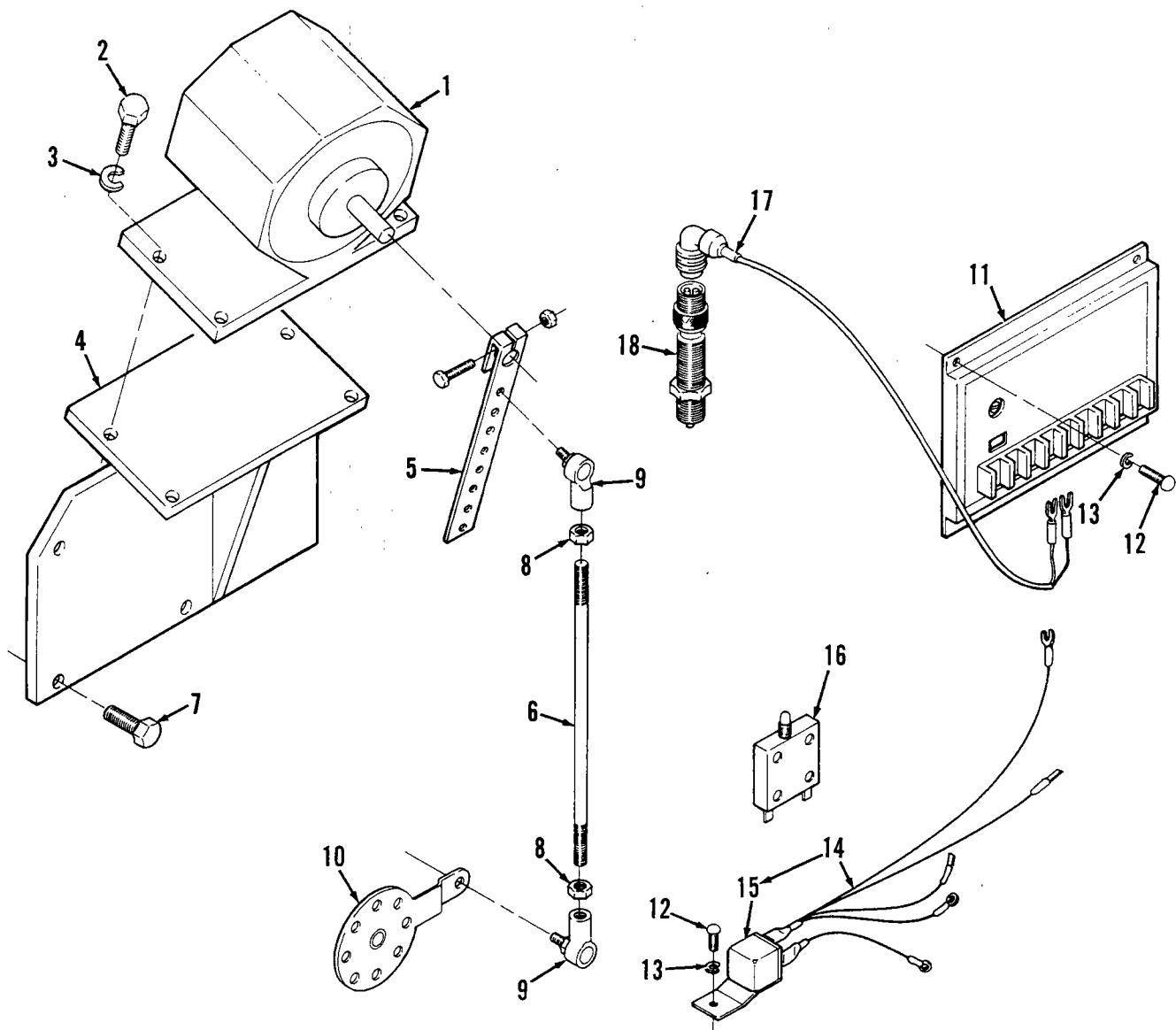
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION	
1	110-3298	1	Head Assembly, Cylinder (Includes Valve Guides, Valve Seats, Cup Plugs, Rotators, Valves, Springs, Retainers, Collets, Wear Plates, Sleeves and Seals)	12	110-3326	6	Rotator, Valve (Intake) Begin Later Portion of Spec A (Note: Intake valve rotators are included with all replacement cylinder heads.)	
2	110-3455	1	Head, Cylinder (Includes Seats, Rotators and Guides)	13	110-3228	12	Seal Assembly, Valve Stem	
3	110-3495	6	Guide, Valve (Semi Finished)	14	110-2979	6	Sleeve, Sealing	
	110-3496	6	Intake (Standard)	15	309-0269	1	Switch, Low Engine	
4			Exhaust (Standard)	16	720-1802	26	Temperature (S5) Controls With 9 Indicator Lights	
			Seat, Valve Intake	17	740-1801	20	Screw, Cap - Hex Head (M12 x 130 MM)	
	110-3226-01	6	Standard	18	110-3225	1	Washer, Flat (M12)	
	110-3226-02	6	.25 MM Oversize	19			Gasket, Cylinder Head	
	110-3226-03	6	.50 MM Oversize				Stud, Rocker Arm	
			Exhaust	115-0204		6	Short	
	110-2781-01	6	Standard		115-0270	6	Long	
	110-2781-02	6	.25 MM Oversize	20	115-0313	3	Guide, Pushrod	
	110-2781-03	6	.50 MM Oversize	21	508-0228	3	Grommet	
5			Plug, Cup	22	115-0253	12	Pushrod	
	517-0142	11	38.1 MM	23	120-0920	1	Tube, Rocker Arm Oil	
	517-0146	4	31.75 MM	24	502-0003	1	Connector, Inverted Male	
	517-0162	6	19.05 MM	25	115-0316	12	Arm, Rocker	
6	110-3039	6	Plug, Hot (Swirl)	26	115-0202	12	Ball, Rocker Arm	
7			Valve	27	526-2119	12	Washer, Flat	
	110-3218	6	Intake	28	115-0315	12	Locknut, Rocker Arm	
	110-3260	6	Exhaust	29			Adapter, Water Pump	
8	110-3300	12	Spring, Valve	30	110-3045	1	Standard	
9	110-3015	12	Retainer, Valve Spring	31	110-3490	1	0.5 MM Oversize	
10	110-2752	24	Collet, Valve Lock	32	168-0174	1	Kit, Gasket - Valve Grind	
11			Plate, Valve Spring Wear	33	800-2085	1	Screw, Cap - Hex Head (M10 x 20 MM)	
	110-2991	12	Early Portion of Spec A		32	740-1008	1	Washer, Flat (M10)
	110-2991	6	Begin Later Portion of Spec A (Exhaust)		33	110-3245	12	Cap, Valve Stem (Not used on some early models)

Gearcase



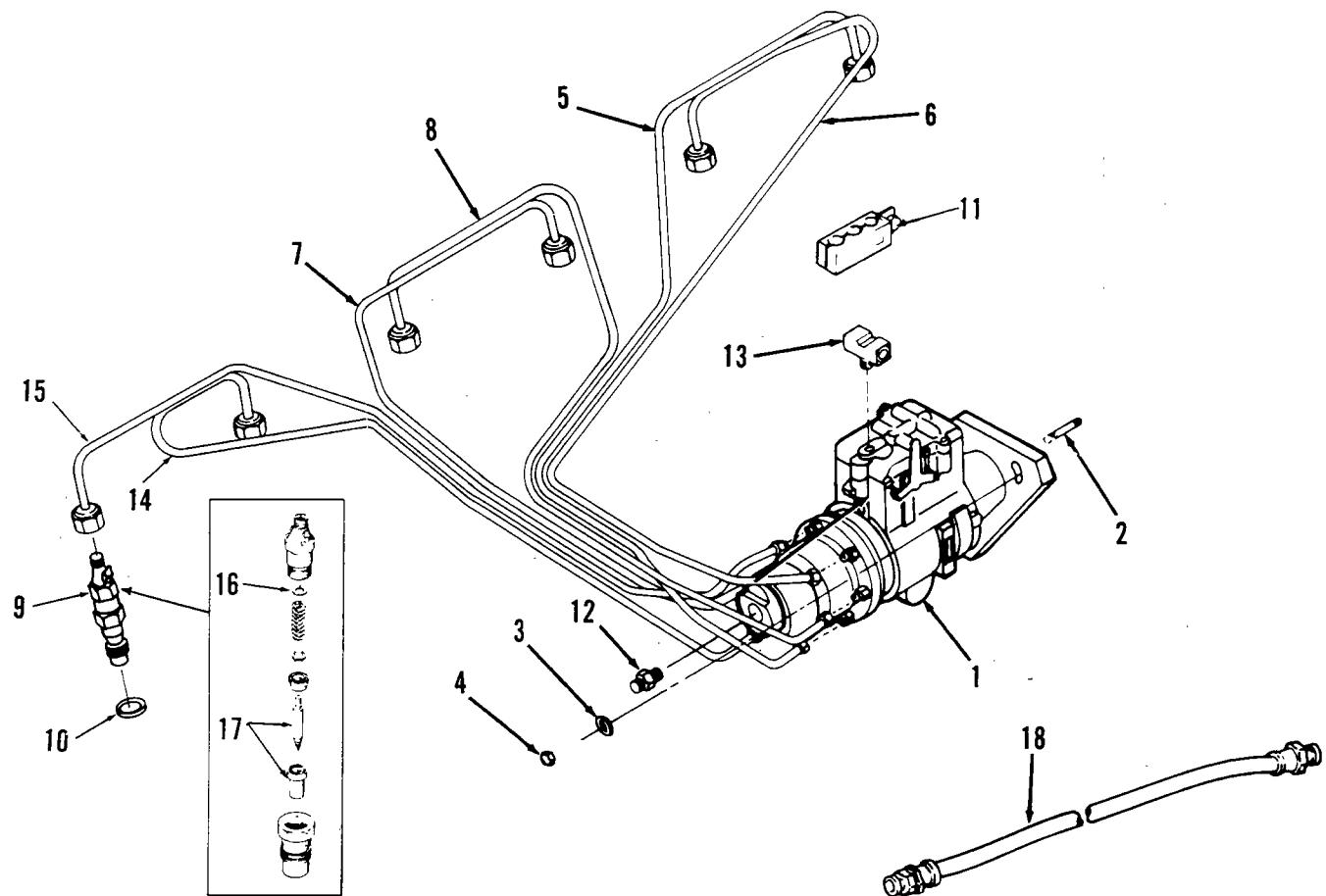
REF. NO.	PART NO.	QTY USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY USED	PART DESCRIPTION
1	105-0513	1	Gear, Idler (Includes Finished Bearing)	19	740-1006	11	Washer, Flat (M8)
2	105-0519	1	Bearing, Idler Gear (Semi Finished)	20	103-0746	1	Gearcase (Includes Oil Seal and Oil Fill Tube)
3	105-0508	1	Shaft, Idler Gear	21	509-0191	1	Seal, Oil (Includes Wear Sleeve)
4	526-2127	1	Washer, Flat (M10)	22	103-0731	1	Gasket, Gearcase
5	718-1064	1	Screw, Cap - Hex Head (M10 x 75 MM)	23	718-1046	2	Screw, Cap - Hex Head M8 x 70 MM
6	103-0716	1	Backplate, Gearcase	24	718-1043	5	M8 x 55 MM
7	120-0983	1	Shaft, Oil Pump Idler Gear	25	103-0735	1	Washer, Flat M8
8	120-0885	1	Gear, Oil Pump Drive	26	740-1006	4	M12
9	718-1035	1	Screw, Cap - Hex Head (M8 x 16 MM)	27	740-1010	4	Cover, Injection Pump Gear Seal, O-Ring
10	526-2106	1	Washer, Flat	28	509-0263	1	Screw, Cap - Hex Head
11	120-1063	1	Gear, Oil Pump Idler (Includes Finished Bearing)	29	718-1048	1	M8 x 80 MM
12	120-1041	1	Bearing, Oil Pump Idler Gear (Semi Finished)	30	718-1044	2	M8 x 60 MM
13	526-2107	1	Washer, Flat	31	718-1036	1	M8 x 20 MM
14	718-1035	1	Screw, Cap - Hex Head (M8 x 16 MM)	32	147-0427	1	Gear, Injection Pump
15	725-1802	1	Screw, Hex Socket Set (M16 x 16 MM)	33	718-1044	2	Screw, Cap - Hex Head (M8 x 60 MM)
16	103-0733	1	Gasket, Gearcase Backplate	30	103-0750	1	Plate, Timing
17	718-1037	1	Screw, Cap - Hex Head M8 x 25 MM	31	815-0578	2	Screw, Cap - Hex Head (M6 x 14 MM)
	718-1039	2	M8 x 35 MM	32	120-0979	1	Bearing, Oil Pump Drive Shaft
18	725-1801	2	Screw, Low Socket Head Cap (M8 x 16 MM)	33	120-1091	1	Pump Kit, Oil (Includes Drive Shaft Bearing)

Electronic Governor



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	151-0566	1	Actuator, Governor	11	151-0605	1	Control, Governor (A12)
2	800-0006	4	Screw, Cap - Hex Head (1/4-20 x 7/8")	12	813-0103	5	Screw, Machine - Round Head (#10-32 x 3/4")
3	850-0040	4	Washer, Lock - Spring (1/4")	13	850-0030	5	Washer, Lock - Spring (#10)
4	150-1996	1	Bracket, Mounting	14	338-1705	1	Harness, Wiring - Includes Relay
5	151-0567	1	Arm, Governor (Includes Screw and Nut)	15	307-1886	1	Relay
6	150-1923	1	Rod, Governor Control	16	320-0540	1	Breaker, Circuit - 15 Amp (CB13) Includes Mounting Nuts
7	800-2071	4	Screw, Cap - Hex Head (M8 x 90 MM)	17	338-1765-01	1	Cable, Magnetic Pickup (60")
8	870-0131	2	Nut, Hex - with ET (#10-32)	18	151-0603-02	1	Sensor, Magnetic Speed
9	150-0939	2	Joint, Ball				
10	151-0437	1	Kit, Throttle Modification (Fuel Injection Pump)				

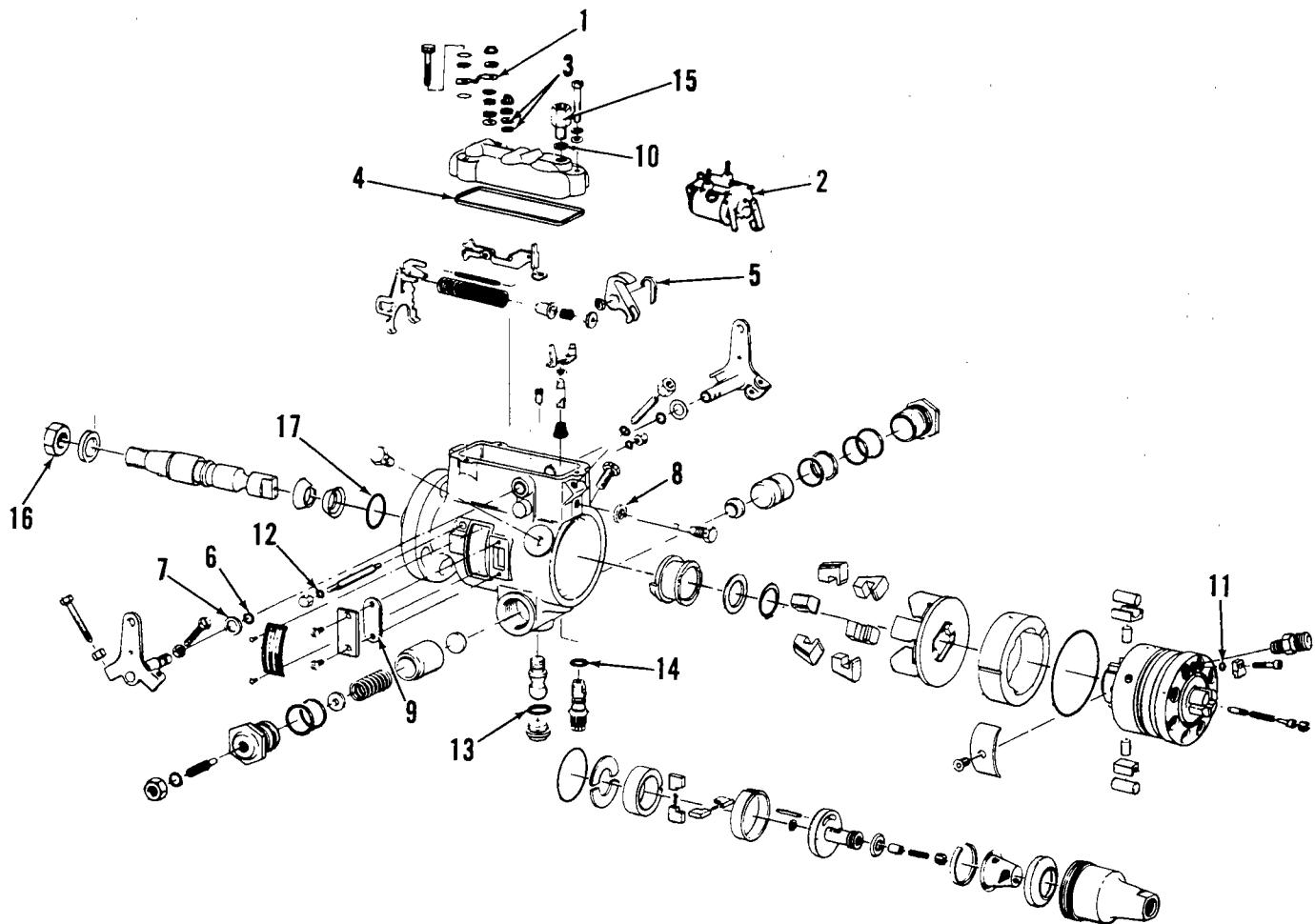
Fuel Injection



Fuel Injection

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	147-0465-12	1	Pump, Fuel Injection (See Separate Page for Components)	16	147-0617	As Req.	Washer, Injection Nozzle Shim
2	520-2403	3	Stud, Injection Pump (M8)	147-0618	As Req.	0.80 MM	
3	526-2106	3	Washer, Flat (M8)	147-0619	As Req.	0.84 MM	
4	750-1006	3	Nut, Hex (M8)	147-0620	As Req.	0.88 MM	
5	147-0666	1	Line, Fuel Injection (No. 1)	147-0621	As Req.	0.92 MM	
6	147-0667	1	Line, Fuel Injection (No. 2)	147-0622	As Req.	0.96 MM	
7	147-0668	1	Line, Fuel Injection (No. 3)	147-0623	As Req.	1.00 MM	
8	147-0669	1	Line, Fuel Injection (No. 4)	147-0624	As Req.	1.04 MM	
9	147-0701	6	Injector, Fuel (Includes Seal)	147-0625	As Req.	1.08 MM	
10	147-0436	6	Seal, Injector	147-0626	As Req.	1.12 MM	
11			Clamp, Fuel Line	147-0628	As Req.	1.16 MM	
	147-0672	3	Clamps Two Lines	147-0629	As Req.	1.20 MM	
	147-0673	2	Clamps Three Lines	147-0630	As Req.	1.24 MM	
	147-0674	1	Clamps Six Lines	147-0631	As Req.	1.28 MM	
12	502-0733	1	Connector	147-0632	As Req.	1.32 MM	
13	502-0057	1	Tee, Pipe - Special	147-0633	As Req.	1.36 MM	
14	147-0670	1	Line, Fuel Injection (No. 5)	147-0634	As Req.	1.40 MM	
15	147-0671	1	Line, Fuel Injection (No. 6)	147-0635	As Req.	1.44 MM	
				147-0636	As Req.	1.48 MM	
				147-0637	As Req.	1.52 MM	
				147-0638	As Req.	1.56 MM	
				147-0639	As Req.	1.60 MM	
				147-0640	As Req.	1.64 MM	
				147-0641	As Req.	1.68 MM	
				147-0642	As Req.	1.72 MM	
				147-0643	As Req.	1.76 MM	
				147-0644	As Req.	1.80 MM	
				147-0645	As Req.	1.84 MM	
				147-0646	As Req.	1.88 MM	
				17	147-0647	6	Tip, Nozzle
				18	501-0094	1	Line, Flexible Fuel - 60" (Fuel Return)

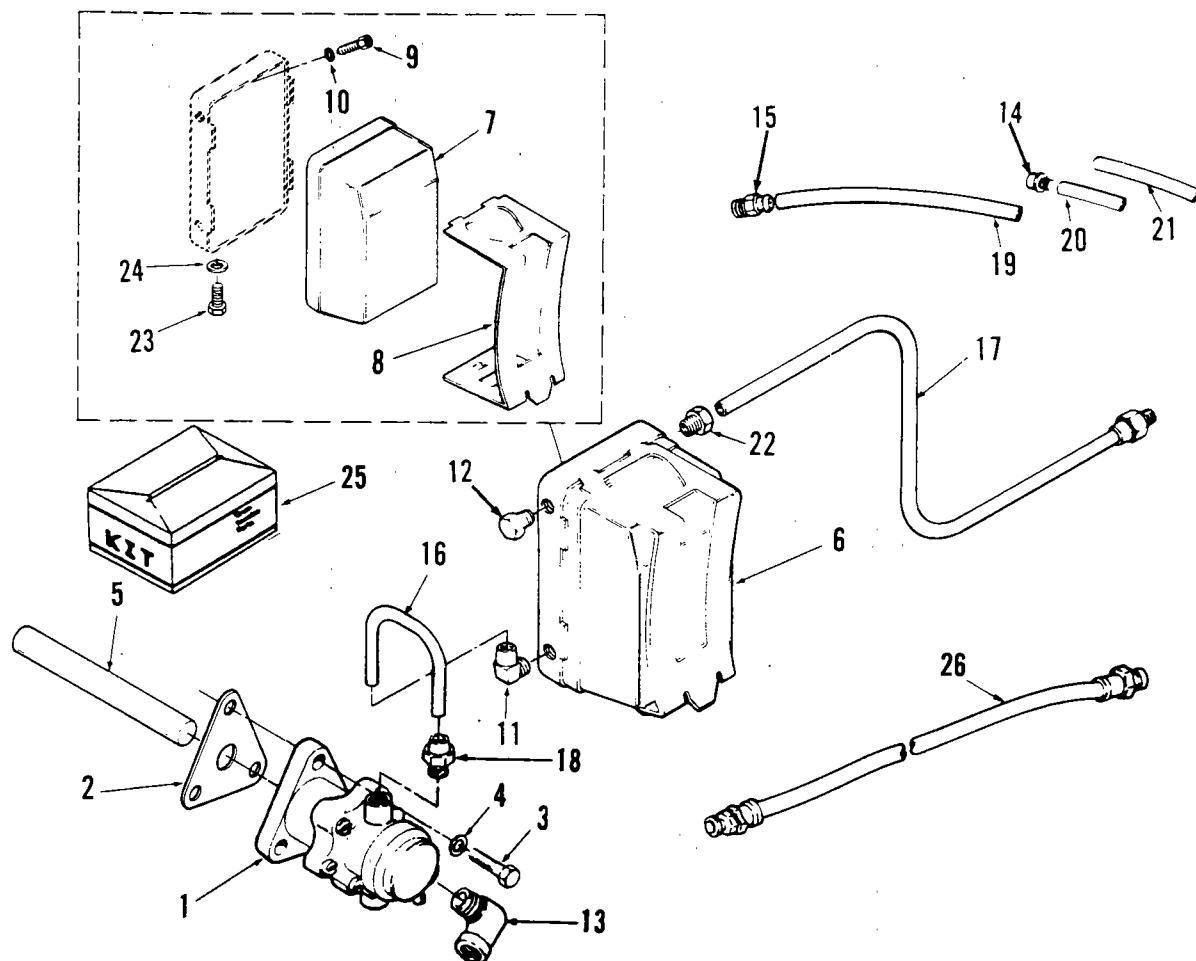
Fuel Injection Pump Components



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	147-0465-12	1	Pump, Fuel Injection (Complete)	10	147-0584	1	Seal, Return Line Connector
1	147-0592	1	Strap, Terminal Grounding	11	147-0583	1	Seal, Locking Plate
2	147-0593	1	Solenoid and Frame Kit	12	147-0582	2	Seal, Pivot Shaft
3	147-0591	2	Washer, Terminal Insulating	13	147-0581	1	Seal, Advance Screw Hole Plug
4	147-0590	1	Gasket, Governor Cover	14	147-0580	1	Seal, Head Locating Screw
5	147-0589	1	Clip, Shaft Retaining (Not required on some pumps)	15	147-0579	1	Connector, Return Line
6	147-0588	2	Seal, Throttle Shaft	16	147-0578	1	Nut, Drive Shaft
7	147-0587	2	Washer, Throttle Shaft Seal	17	509-0265	1	Seal, Pilot Tube
8	147-0586	1	Washer, Guide Stud				
9	147-0585	1	Gasket, Timing Line Cover				

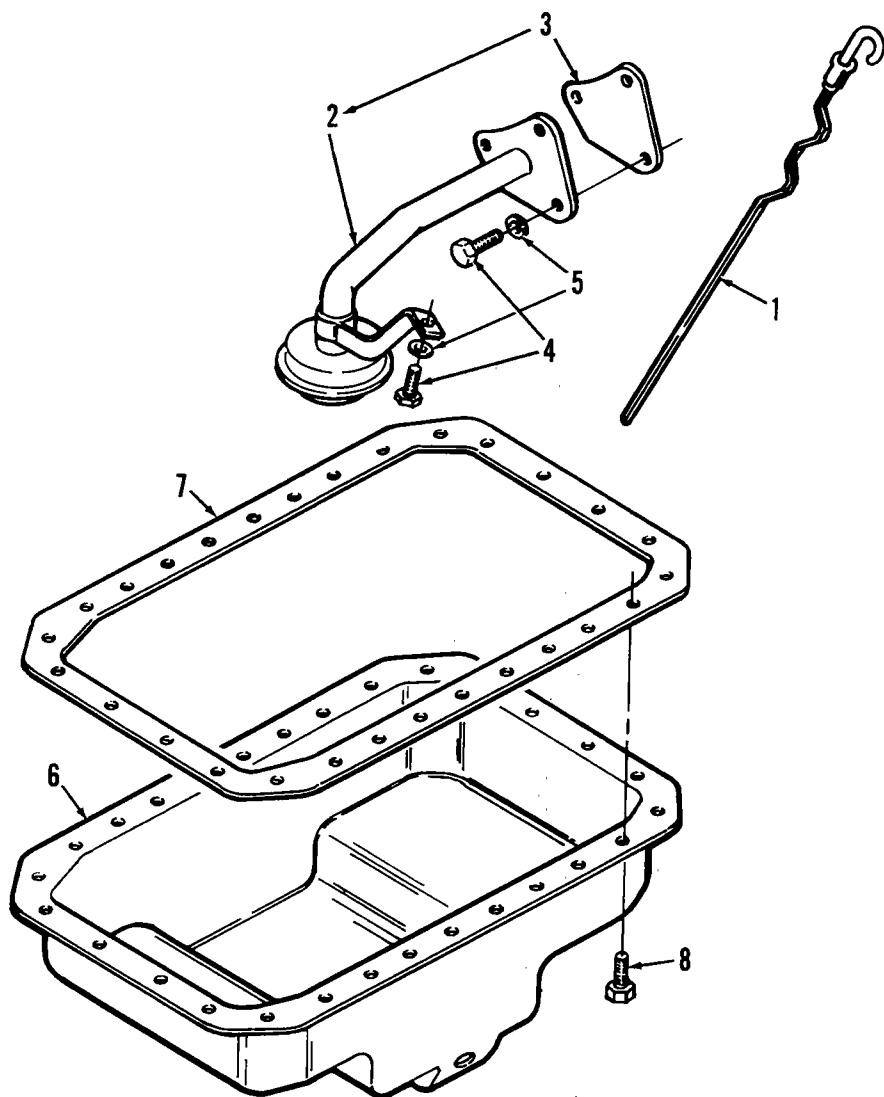
Note: For component parts not listed contact manufacturer shown on nameplate.

Fuel System



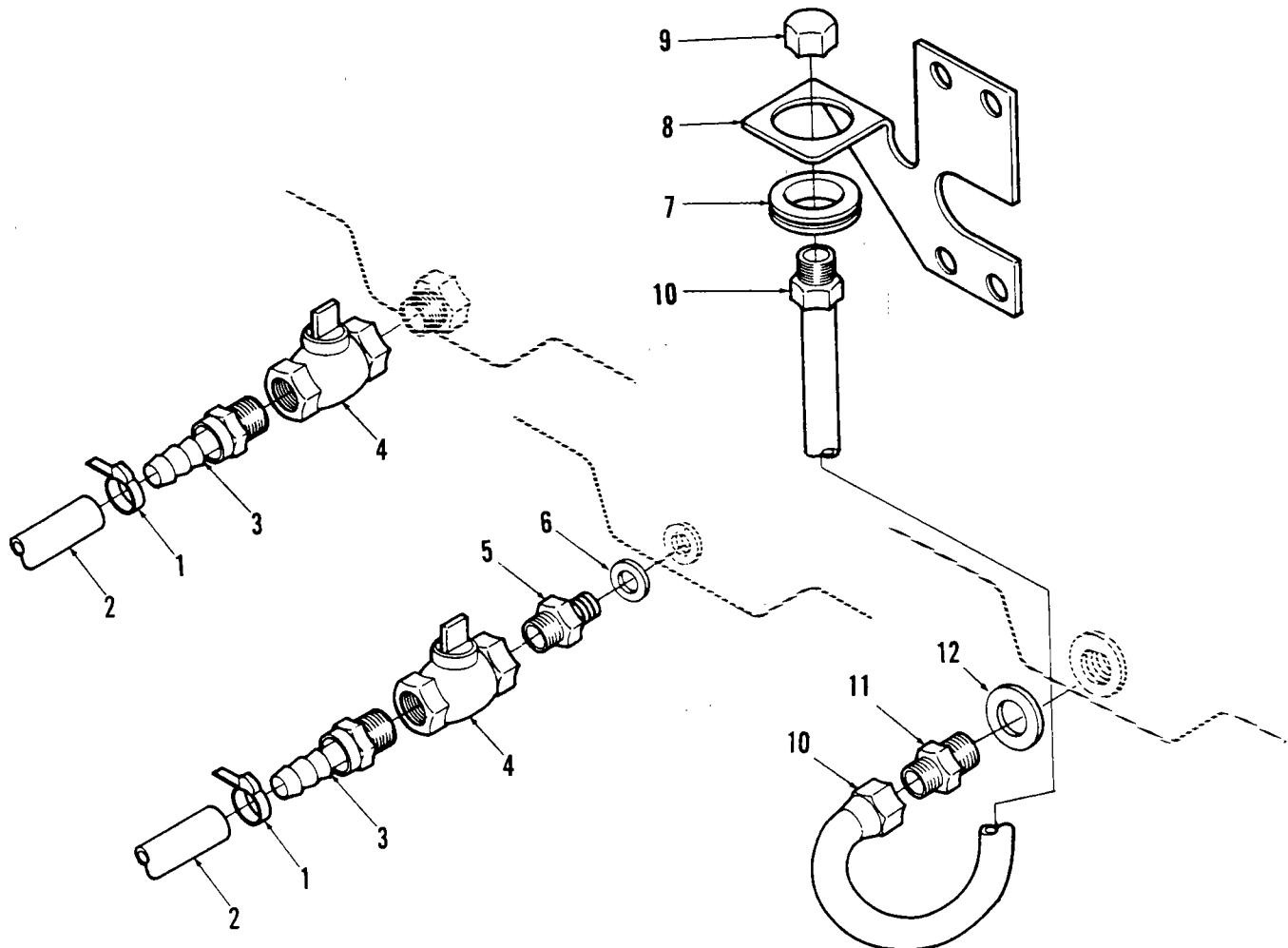
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	149-2067	1	Kit, Fuel Transfer Pump (Includes Mounting Gasket) Used During Early Portion of Spec A (Pump Inlet and Outlet 60° Apart)	16	149-1797	1	Line, Fuel Used During Early Portion of Spec A (Used With 149-2067 Fuel Transfer Pump)
2	149-1728	1	Gasket, Fuel Transfer Pump	17	149-1796	1	Line, Fuel
3	718-1021	3	Screw, Cap - Hex Head (M6 x 20 MM)	18	502-0774	1	Fitting, Transfer Pump Outlet Elbow, Flareless Tube (Used During Early Portion of Spec A)
4	740-1004	3	Washer, Flat (M6)	19	503-1055	1	Line, Fuel Return (Flexible) 380 MM Long
5	149-1732	1	Pushrod, Fuel Transfer Pump	20	503-1054	1	Line, Fuel Return (Flexible) 25 MM Long
6	149-1755	1	Filter Assembly (Includes Filter, Base, Clamp, Drain Plug, Drain Seal and Plugs)	21	503-1053	5	Line, Fuel Return (Flexible) 180 MM Long
7	149-1754	1	Filter, Fuel	22	502-0773	1	Connector, Flareless Tube (Use Began During Later Portion of Spec A)
8	149-1801	1	Clamp, Fuel Filter	23	149-1835	1	Plug, Filter Drain
9	725-1074	2	Screw, Cap - Socket Head (M10 x 20 MM)	24	149-1836	1	Gasket, Filter Drain Plug
10	740-1008	2	Washer, Flat (M10)	25	149-2069	1	Repair Package - Fuel Pump
11	502-0774	1	Elbow, Flareless Tube Fitting	26	501-0441	1	Line, Flexible Fuel - 40" (Fuel Supply)
12	502-0153	2	Plug, Pipe (1/4")				
13	502-0054	1	Elbow, Pipe (Use Began During Later Portion of Spec A)				
14	502-0736	1	Plug				
15	502-0738	1	Connector, Male				

Oil Pan



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	123-1582	1	Indicator, Oil Level	5	740-1006	4	Washer, Flat (M8)
2	120-1124	1	Pickup Kit, Oil (Includes Gasket)	6	102-1191	1	Pan, Oil (Includes Plug and Plug Gasket)
3	120-0917	1	Gasket, Oil Pickup	7	102-1036	1	Gasket, Oil Pan
4	718-1036	2	Screw, Cap - Hex Head M8 x 20 MM	8	815-0547	36	Screw, Cap - Hex Head (Includes Washer) M8 x 20 MM
	718-1048	2	M8 x 80 MM				

Oil Drain Hardware

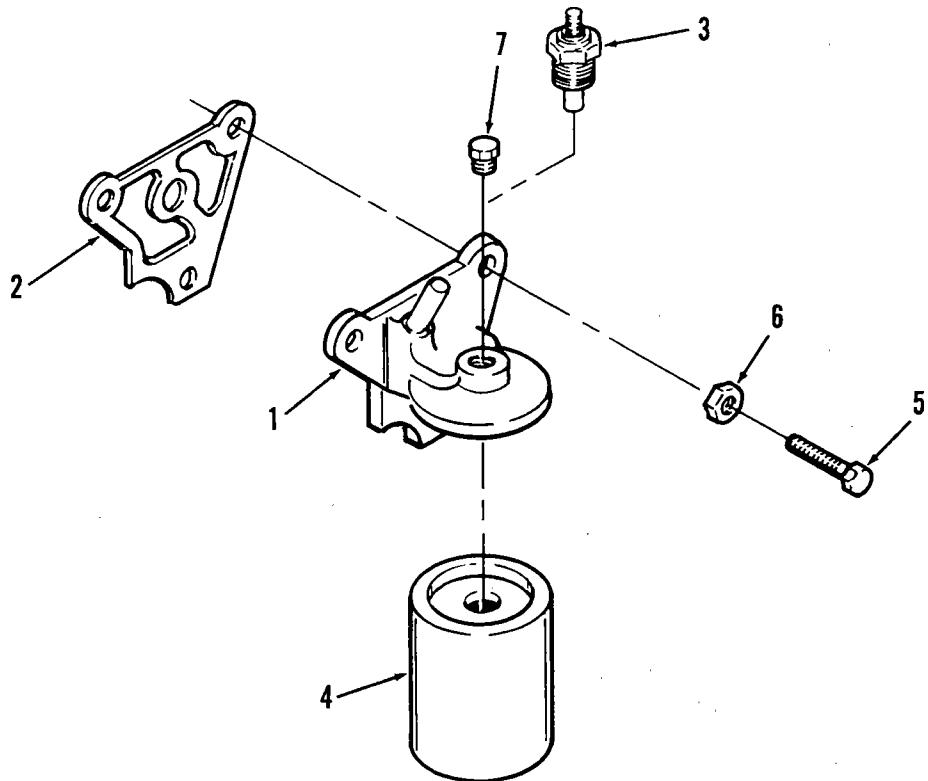


REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0382	1	*Clamp, Hose
2	503-1276	1	*Hose, Oil Drain (14")
3	502-0415	1	*Adapter, Pipe to Hose
4	504-0011	1	*Valve, Shutoff
5	502-0772	1	#Adapter, Oil Drain (M12 x 1/2-14)
6	102-1046	1	#Gasket (12.3 MM ID)
7	508-0250	1	+Grommet
8	102-1235	1	+Bracket, Oil Drain
9	502-0876	1	+Cap, Pipe

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
10	501-0494	1	+Line, Oil Drain (31")
11	102-1237	1	+Adapter, Oil Drain (M18 x 1/2-14)
12	102-1147	1	+Gasket (18.3 MM ID)

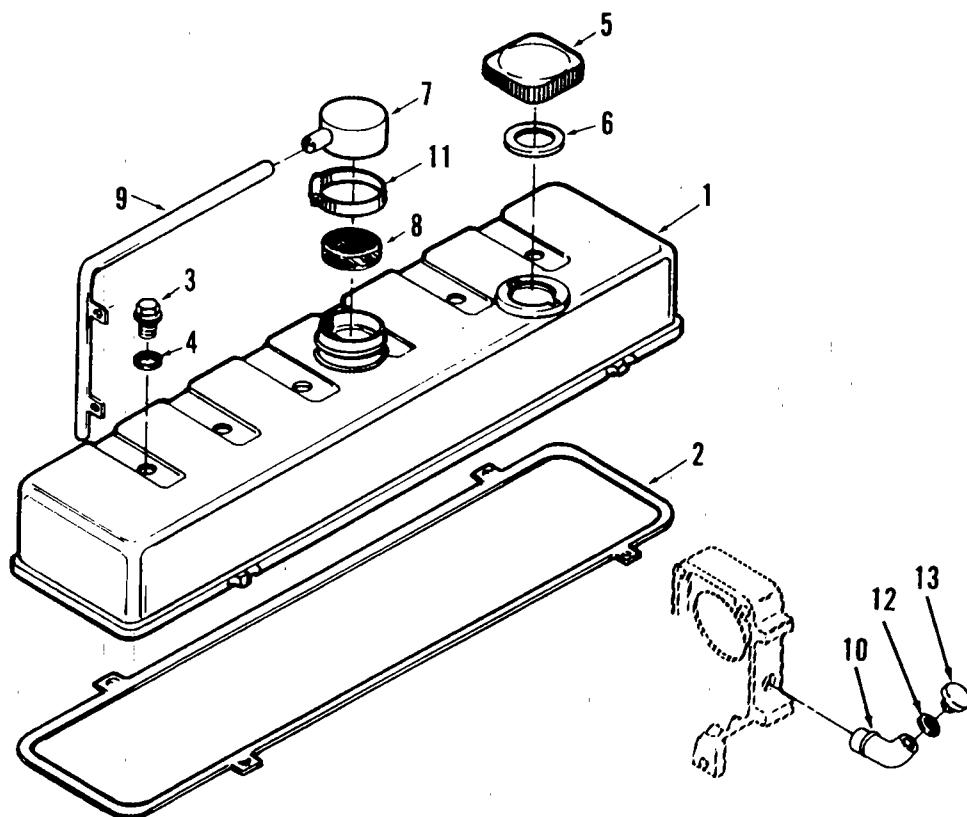
* - Used during early and middle portion of Spec A
 # - Used during early portion of Spec A
 + - Use began during later portion of Spec A

Oil Filter



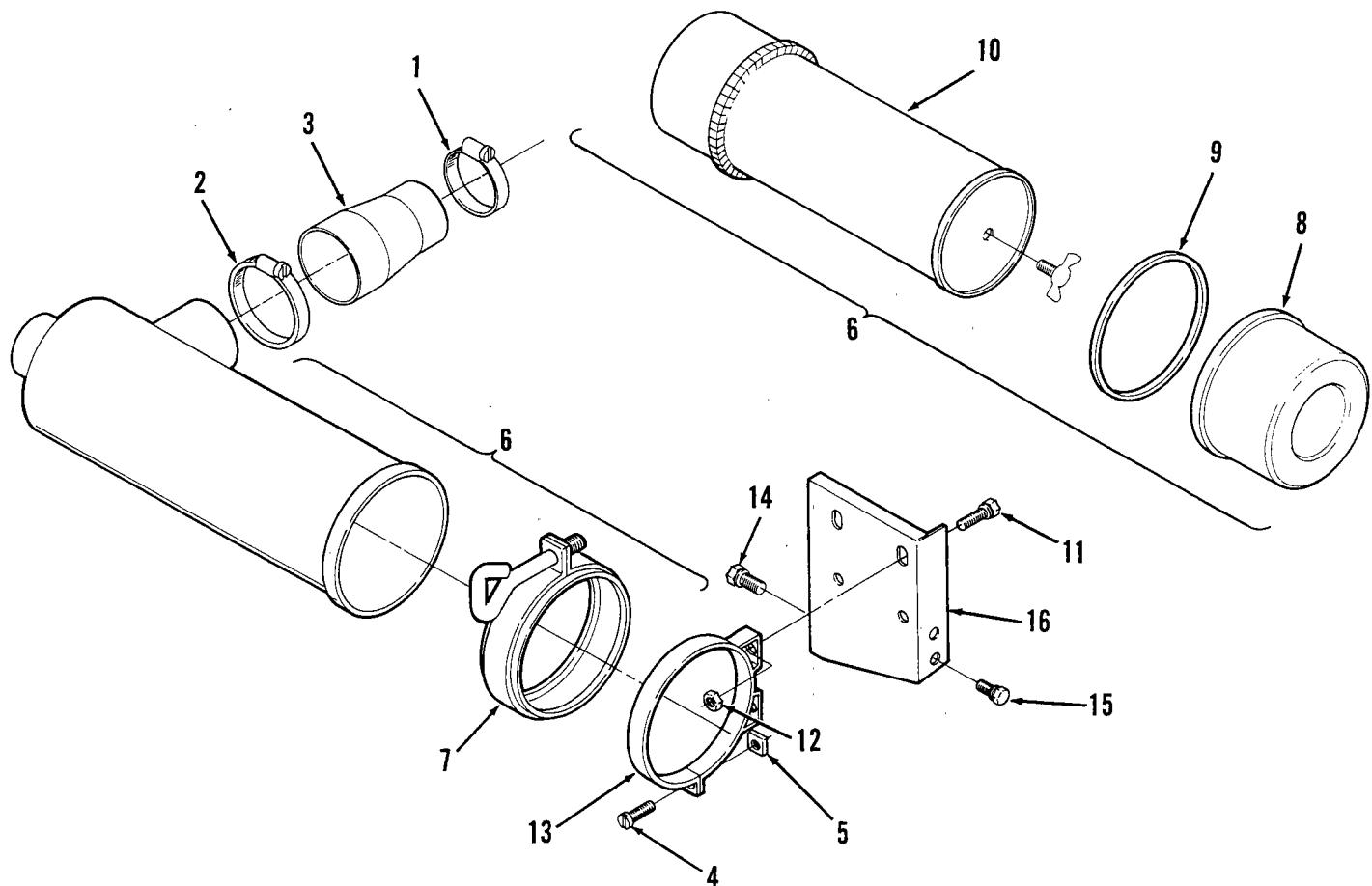
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	122-0613	1	Adapter, Oil Filter (Includes Gasket)	4	122-0550	1	Filter, Oil
2	122-0635	1	Gasket, Adapter	5	718-1037	3	Screw, Cap - Hex Head (M8 x 25 MM)
3	193-0353	1	Sender, Oil Temperature (E3) Controls With 2 Indicator Lights and Oil Temperature Gauge	6	526-2108	3	Washer, Flat (M8)
				7	505-0274	1	Plug, Pipe - Countersunk (1/8")

Oil Fill



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	115-0347	1	Kit, Rocker Cover	7	123-1583	1	Cover, Breather
2	115-0244	1	Gasket, Rocker Cover	8	123-1675	1	Element, Breather
3	115-0320	6	Capnut, Rocker Cover	9	123-1589	1	Tube, Breather
4	115-0232	6	Gasket, Capnut	10	123-1558	1	Tube, Oil Fill
5	123-1605	1	Cap, Oil Fill (Includes Gasket)	11	503-1143	1	Clamp, Hose
6	123-1518	1	Gasket, Oil Fill Cap	12	509-0142	1	Seal, O-Ring
				13	123-1647	1	Cap, Oil Fill

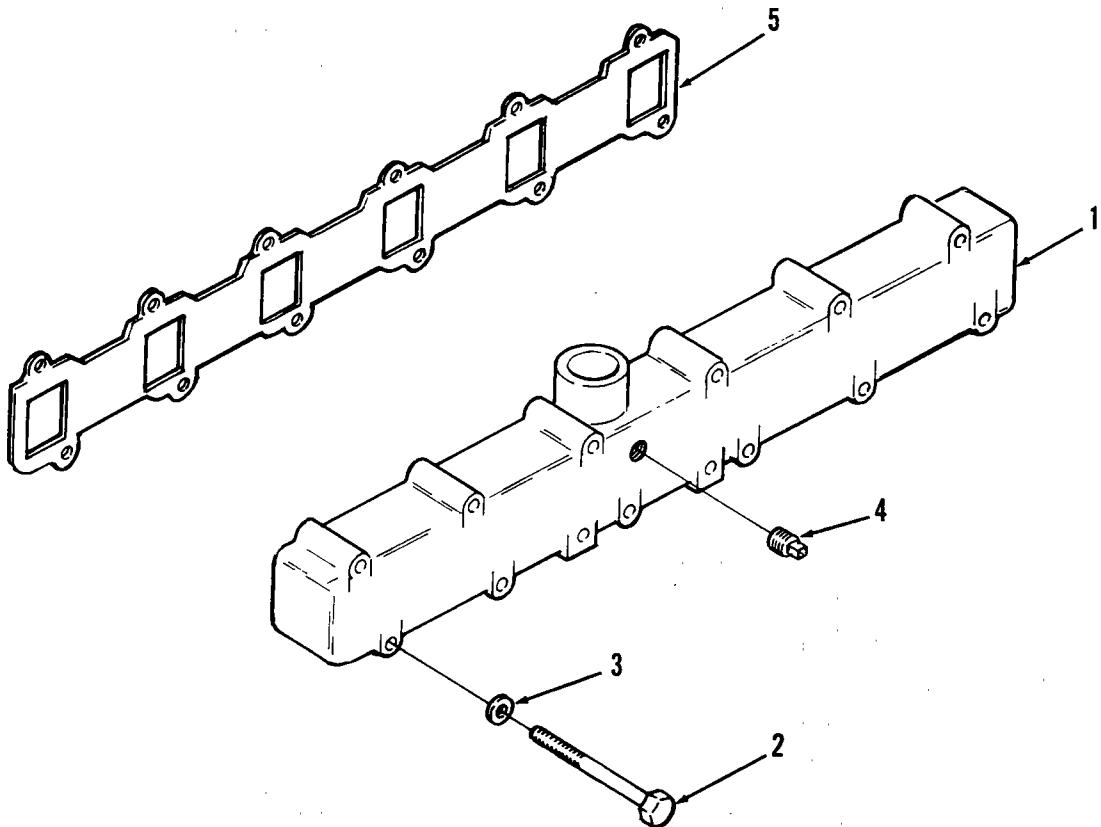
Air Cleaner



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-1087	1	Clamp, Hose	11	821-2060	4	Screw, Self-locking - Hex
2	503-0529	1	Clamp, Hose	12	870-2056	4	Washer Head (M10 x 20 MM)
3	140-1895	1	Reducer, Hose	13	140-0649	2	Nut, Self-locking - Hex
4	812-0153	2	Screw, Machine - Round Head (1/4-20 x 1")	14	821-2076	1	Washer Head (M10)
5	863-0002	2	Nut, Square (1/4-20)	15	821-2061	2	Band, Mounting
6	140-1905	1	Cleaner Assembly, Air (Includes Thumbscrew and Parts Marked *)	16	140-1916	1	Screw, Self-locking - Hex
7	140-1935	1	*Clamp				Washer Head (M12 x 25 MM)
8	140-1933	1	*Cup				Screw, Self-locking - Hex
9	140-1934	1	*Seal, O-Ring				Washer Head (M10 x 25 MM)
10	140-1932	1	*Element				Bracket, Mounting

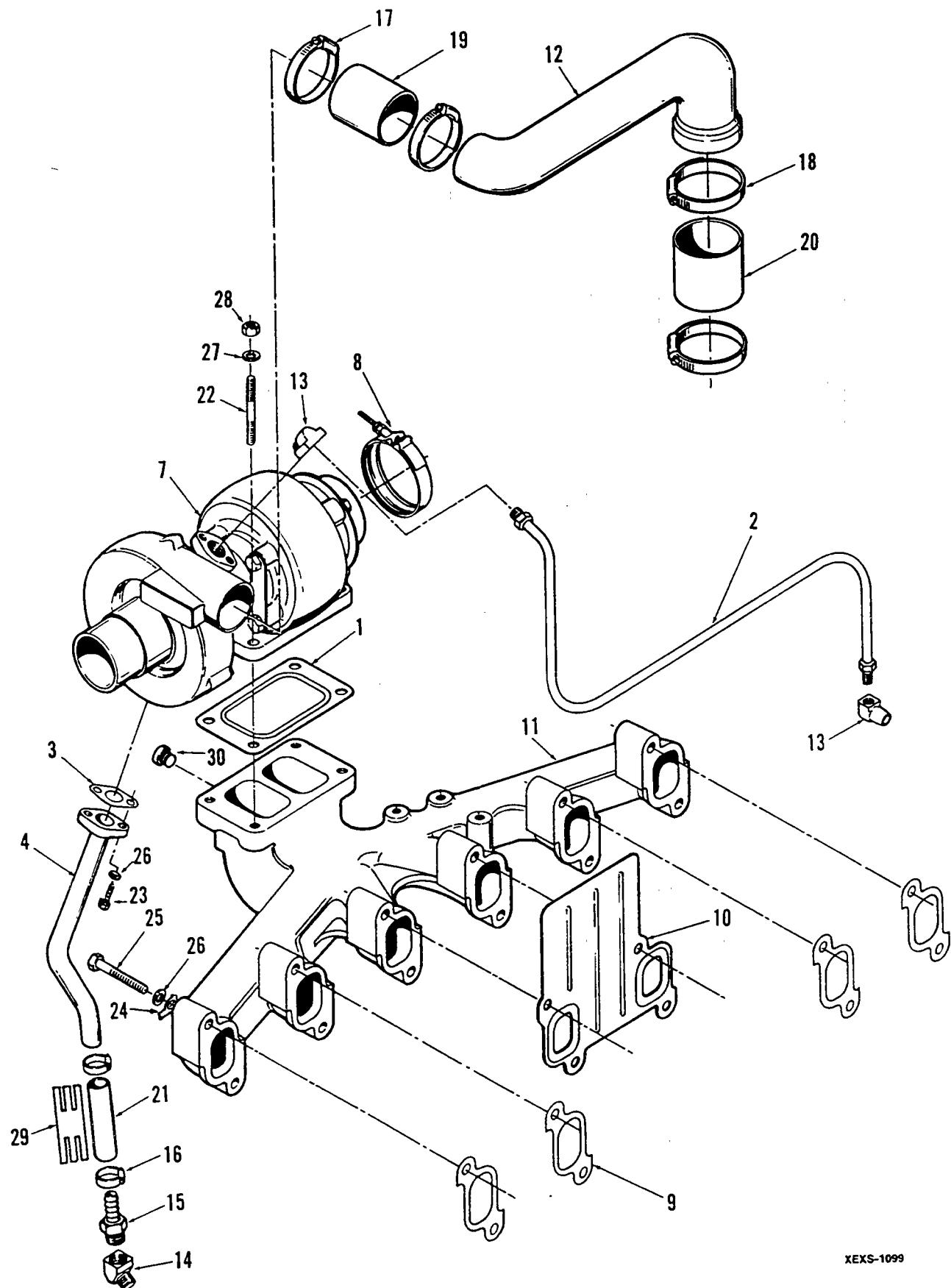
* - Parts Included in 140-1905 Air Cleaner Assembly

Intake Manifold



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	154-2461	1	Manifold, Intake	3	740-1006	12	Washer, Flat (M8)
2	718-1801	12	Screw, Cap - Hex Head (M8 x 85 MM)	4	505-0274	1	Plug, Pipe (1/8")
				5	154-2300	1	Gasket, Intake Manifold

Exhaust Manifold and Turbocharger

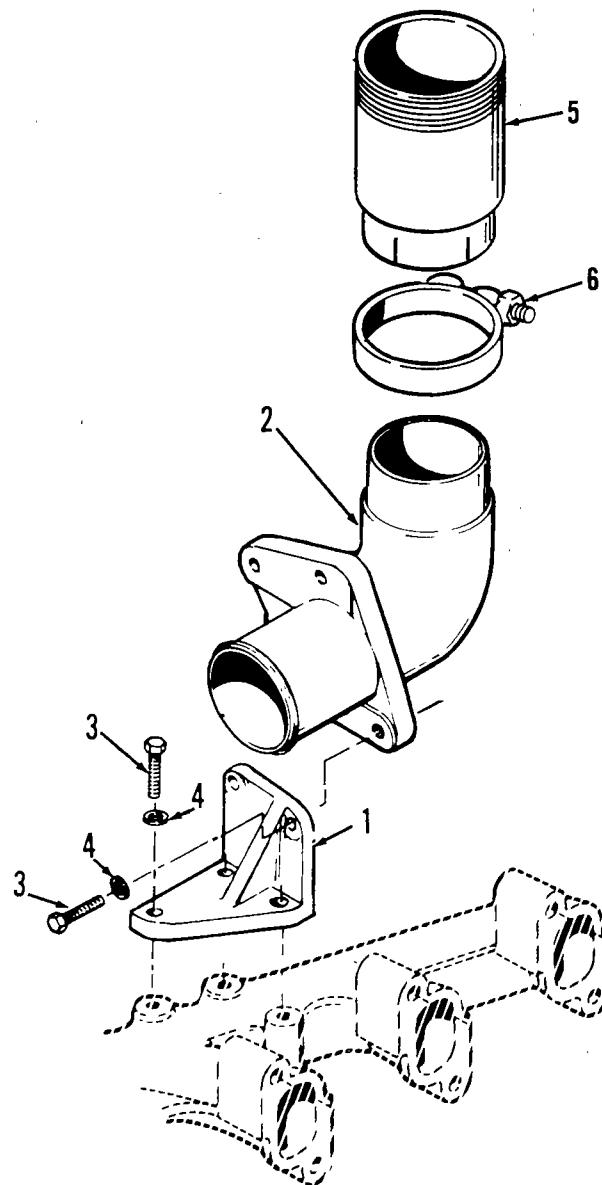


XEXS-1099

Exhaust Manifold and Turbocharger

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	127-0324	1	Gasket, Turbocharger	18	503-1142	2	Clamp, Hose
2	127-0122	1	Line, Oil (Feed)	19	503-1159	1	Hose (50.8 MM x 80 MM)
3	127-0338	1	Gasket, Oil Drain Flange	20	503-1160	1	Hose (63.5 MM x 80 MM)
4	127-0341	1	Drain, Oil - Turbo	21	503-1161	1	Hose (19.5 MM x 70 MM)
7	127-0314	1	Turbocharger	22	520-2407	4	Stud
8	127-0315	1	Clamp, V	23	720-1035	2	Screw, Cap - Hex Head (M8 x 16 MM)
9	154-2162	4	Gasket, Exhaust Manifold	24	154-2648	12	Washer, Lock Tab
10	154-2325	1	Gasket, Exhaust Manifold	25	800-2516	12	Screw, Cap - Hex Head (M8 x 40 MM)
11	154-2578	1	Manifold, Exhaust	26	740-1006	14	Washer, Flat (M8)
12	154-2351	1	Tube, Cross Over	27	740-1008	4	Washer, Flat (M10)
13	502-0825	2	Elbow, Inverted Flare	28	750-1008	4	Nut, Hex (M10)
14	502-0826	1	Elbow, Street (45°)	29	127-0344	1	Shield, Heat
15	502-0827	1	Adapter, Pipe to Hose	30	505-0180	2	Plug, Pipe - Countersunk
16	503-1136	2	Clamp, Hose				
17	503-1141	2	Clamp, Hose				

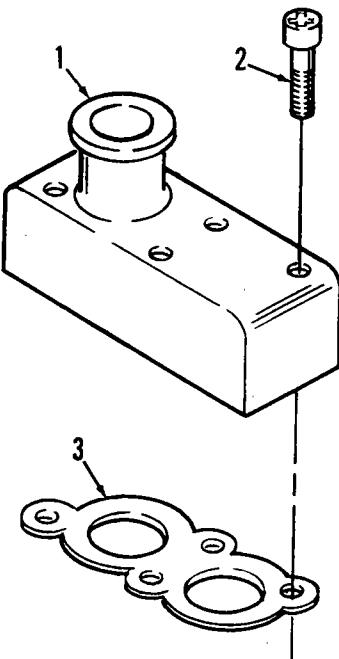
Exhaust Elbow



XEXS-1099-1

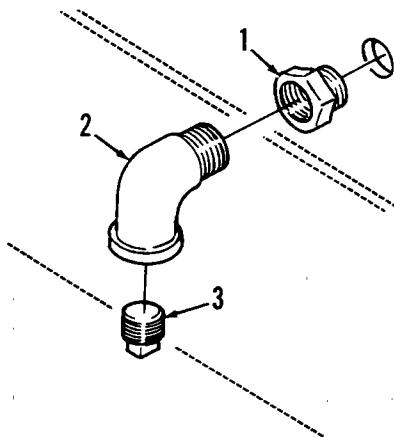
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	127-0129	1	Bracket, Exhaust Duct	4	740-1006	5	Washer, Flat (M8)
2	127-0130	1	Flange, Exhaust Discharge	5	127-0132	1	Tube, Exhaust
3	720-1037	5	Screw, Cap - Hex Head (M8 x 25 MM)	6	503-0965	1	Clamp

Coolant Outlet Connector



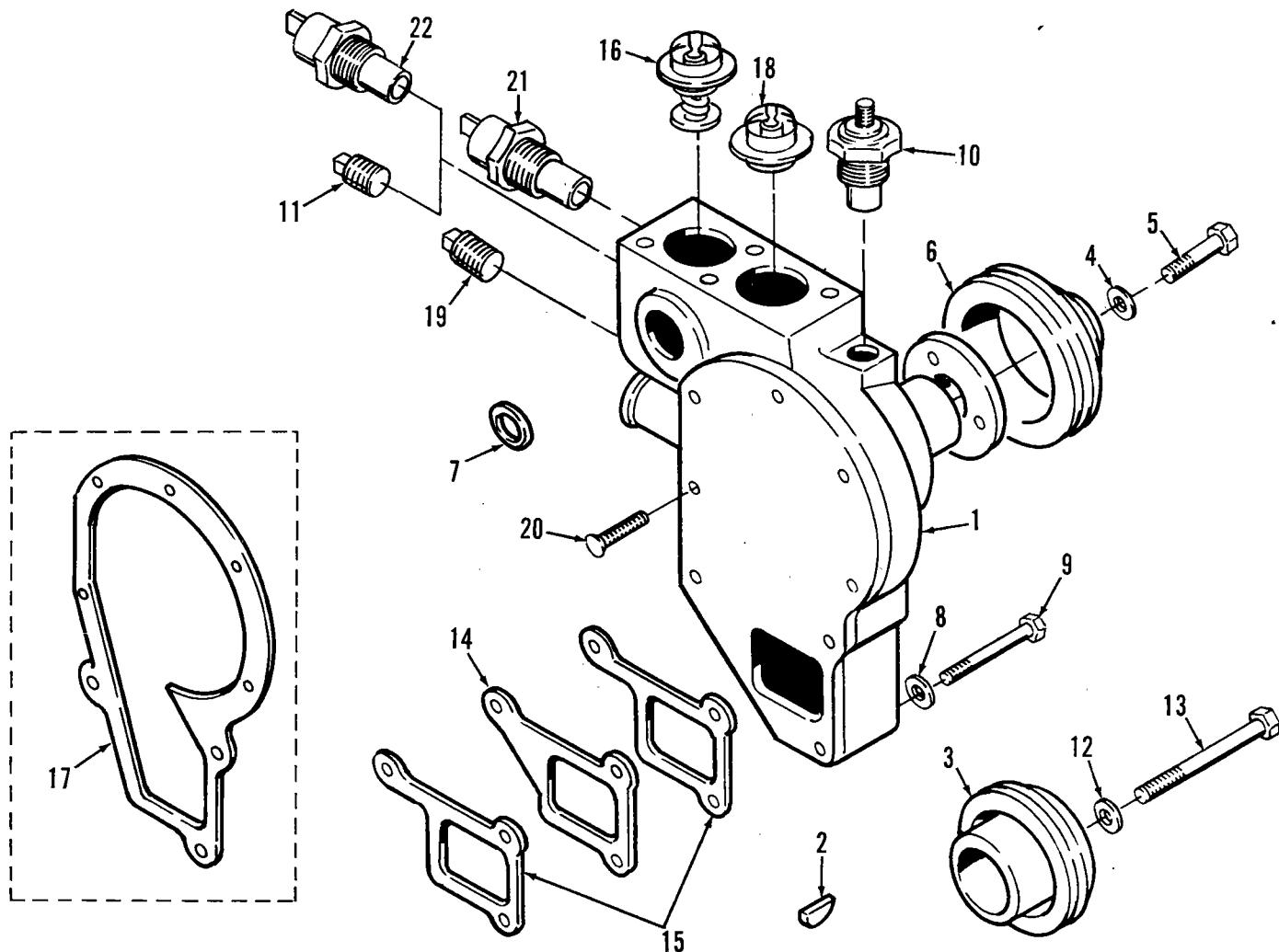
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	309-0473	1	Cover, Thermostat (Includes Gasket)
2	725-1056	4	Screw, Cap - Socket Head (M8 x 50 MM)
3	309-0424	1	Gasket, Thermostat Cover

Coolant Heater Connection



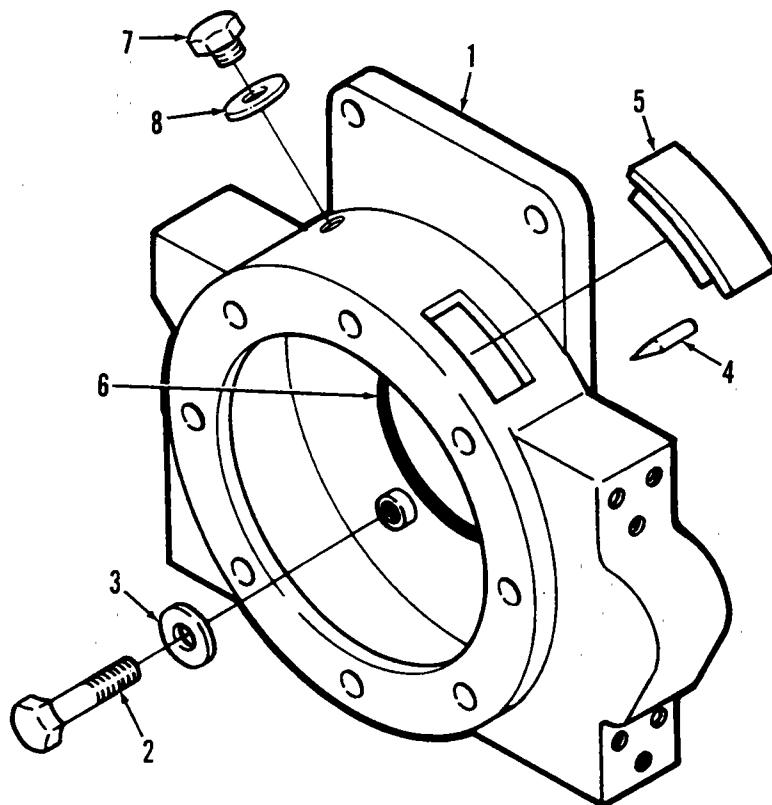
REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	505-0017	1	Bushing
2	502-0156	1	Elbow, Street
3	502-0153	1	Plug, Brass

Coolant Pump



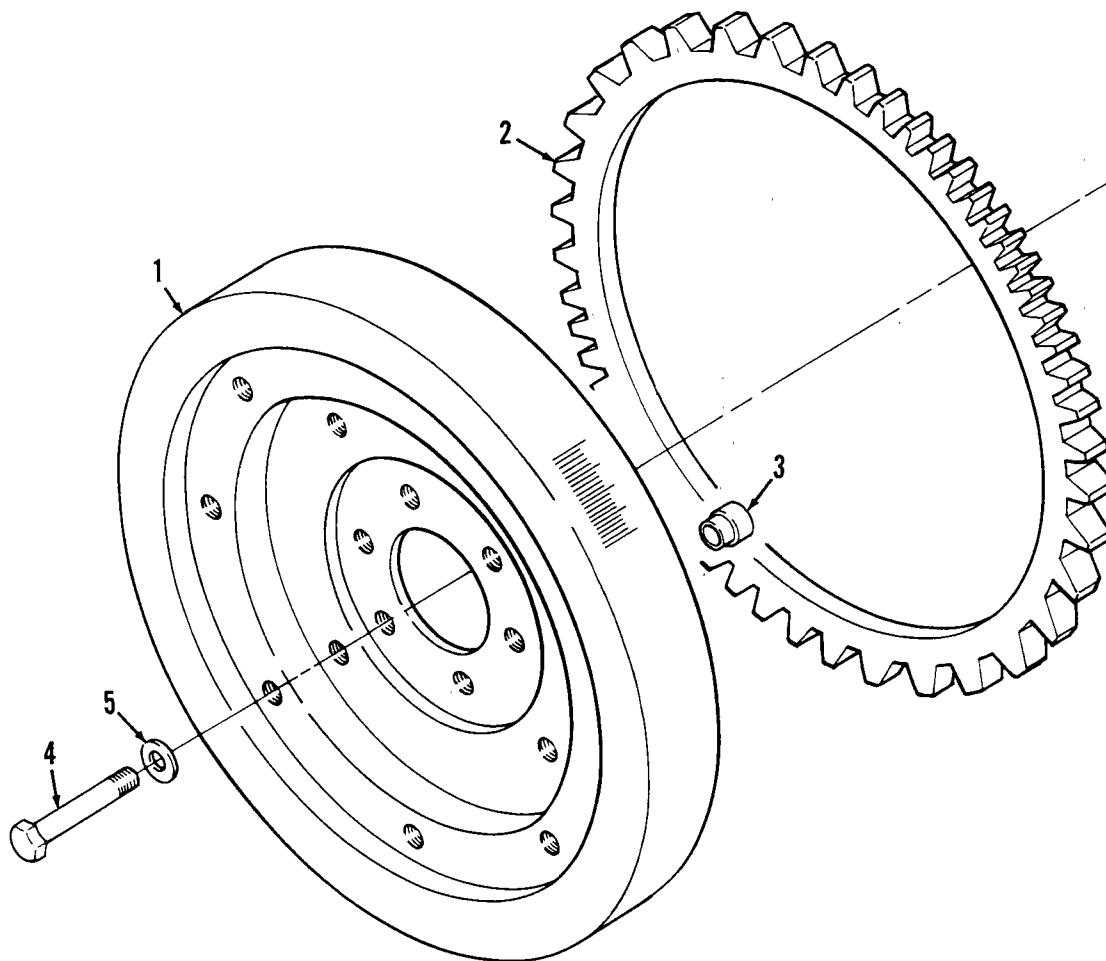
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	131-0349	1	Kit, Coolant Pump (Includes Mounting Gaskets)	15	131-0294	2	Gasket, Pump Mounting Kit, Thermostat (192°)
2	515-0245	1	Key - Crankshaft Pulley	16	309-0458	1	Includes Cover Gasket
3	104-1467	1	Pulley, Crankshaft	17	131-0335	1	Gasket, Backplate
4	740-1006	4	Washer, Flat (M8)	18	309-0462	1	Kit, Thermostat (180°)
5	718-1035	4	Screw, Cap - Hex Head (M8 x 16 MM)	19	502-0317	1	Includes Cover Gasket
6	131-0345	1	Pulley, Coolant Pump	20	815-0612	5	Plug, Pipe (3/4")
7	509-0264	1	Seal, O-Ring	21	309-0437	1	Screw, Countersunk - Flat Head - Torque Drive (Special)
8	740-1006	3	Washer, Flat (M8)				Switch, Thermostat - High
9	718-1044	3	Screw, Cap - Hex Head (M8 x 60 MM)				Engine Coolant Temperature (S1) (Opens at 202° F. - Closes at 222° F.)
10	193-0318	1	Sender, Water Temperature (E2)	22	309-0436	1	Switch, Thermostat - High
11	502-0775	1	Plug, Pipe (3/8") Controls with 2 Indicator Lights				Engine Coolant Temperature (S2 - Pre-Alarm) (Opens at 196° F. - Closes at 216° F.)
12	526-0283	1	Washer, Flat (M8)				Controls With 9 Indicator Lights
13	720-1123	1	Screw, Cap - Hex Head (M16 x 60 MM)				
14	131-0324	1	Spacer, Coolant Pump				

Flywheel Housing



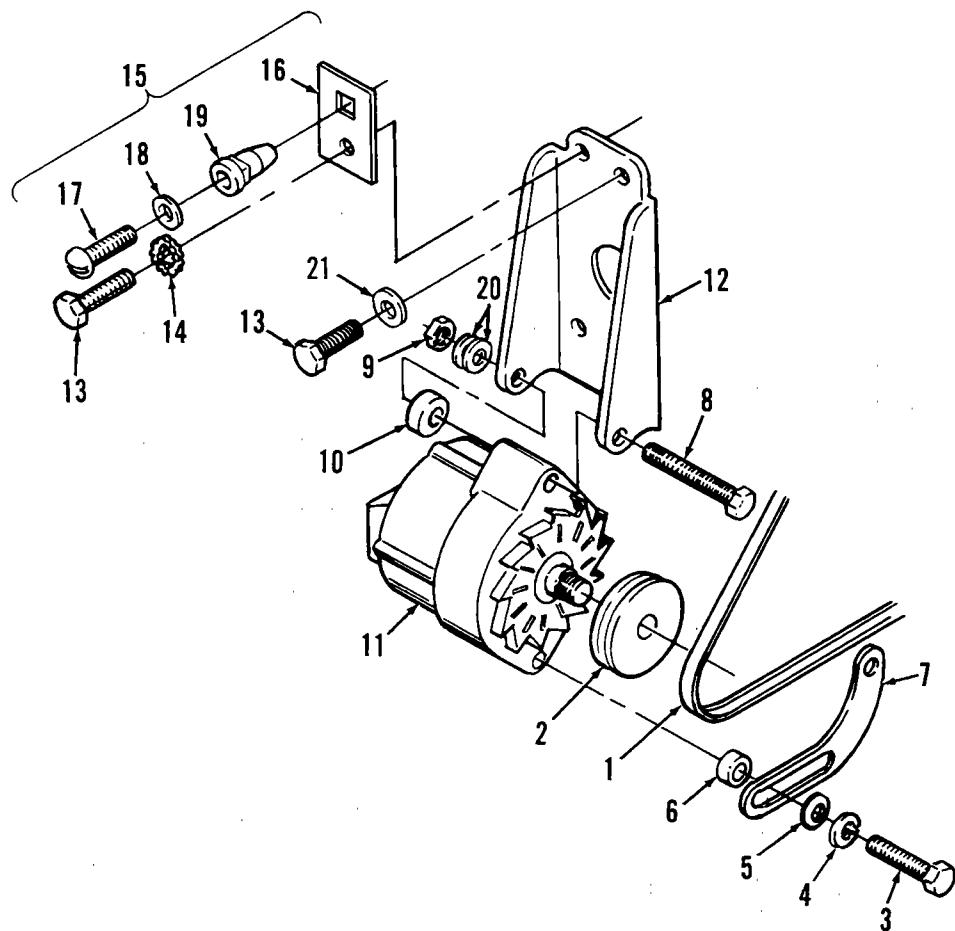
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Housing, Flywheel (Includes Seal and Indicator)	2	718-1078	6	Screw, Cap - Hex Head (M12 x 50 MM)
101-0740-02	101-0740-02	1	With Magnetic Pickup Hole Drilled 47° From Horizontal	3	740-1801	6	Washer, Flat (M12)
101-0740-01	101-0740-01	1	With Magnetic Pickup Hole Drilled 70° From Horizontal	4	160-1292	1	Indicator, Timing
				5	101-0592	1	Plug, Timing Window
				6	101-0630	1	Seal, Flywheel Housing
				7	505-2012	1	Plug, Hex
				8	740-1014	1	Washer, Flat (M16)

Flywheel1



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	104-1503	1	Flywheel Assembly (Includes Ring Gear and Alignment Pin)	4	720-1804	6	Screw, Cap - Flange Hex Head (M10 x 38 MM)
2	104-1185	1	Gear, Ring	5	740-1008	6	Washer, Flat (M10)
3	104-1171	1	Pin, Alignment				

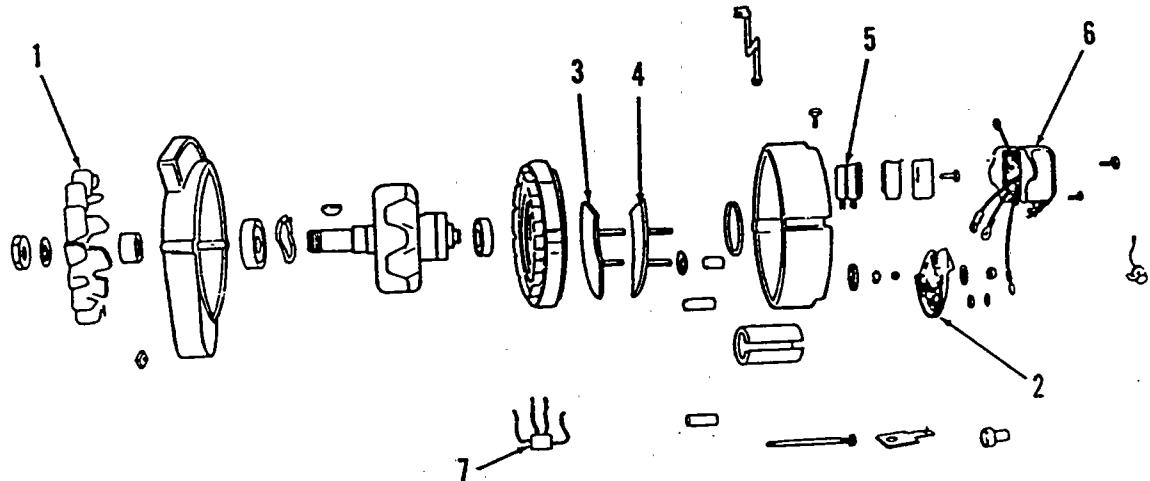
Alternator



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	511-0147-02	2	Belt	13	718-1037	4	Screw, Cap - Hex Head (M8 x 25 MM)
2	191-1333	1	Pulley	14	856-0010	1	Washer, Lock - EIT (3/8")
3	800-2060	1	Screw, Cap - Hex Head (M8 x 35 MM)	15	332-1292	1	Terminal Assembly (Includes Parts Marked *)
4	850-2008	1	Washer, Lock - Spring (M8)	16	332-1281	1	*Bracket, Terminal
5	526-2106	1	Washer, Flat (M8)	17	809-0035	1	*Screw, Sheet Metal - Round Head (#8 x 3/4")
6	191-1541	1	Spacer	18	508-0015	1	*Washer, Fiber
7	191-1312	1	Strap, Adjusting	19	870-0196	1	*Nut, Insulation
8	800-2100	1	Screw, Cap - Hex Head (M10 x 100 MM)	20	740-1008	2	Washer, Flat (M10)
9	860-2009	1	Nut, Hex (M10)	21	740-1006	3	Washer, Flat (M8)
10	191-1321	1	Spacer				
11	191-1525	1	Alternator (37 Amp) See Separate Page for Components				
12	191-1332	1	Bracket, Mounting				

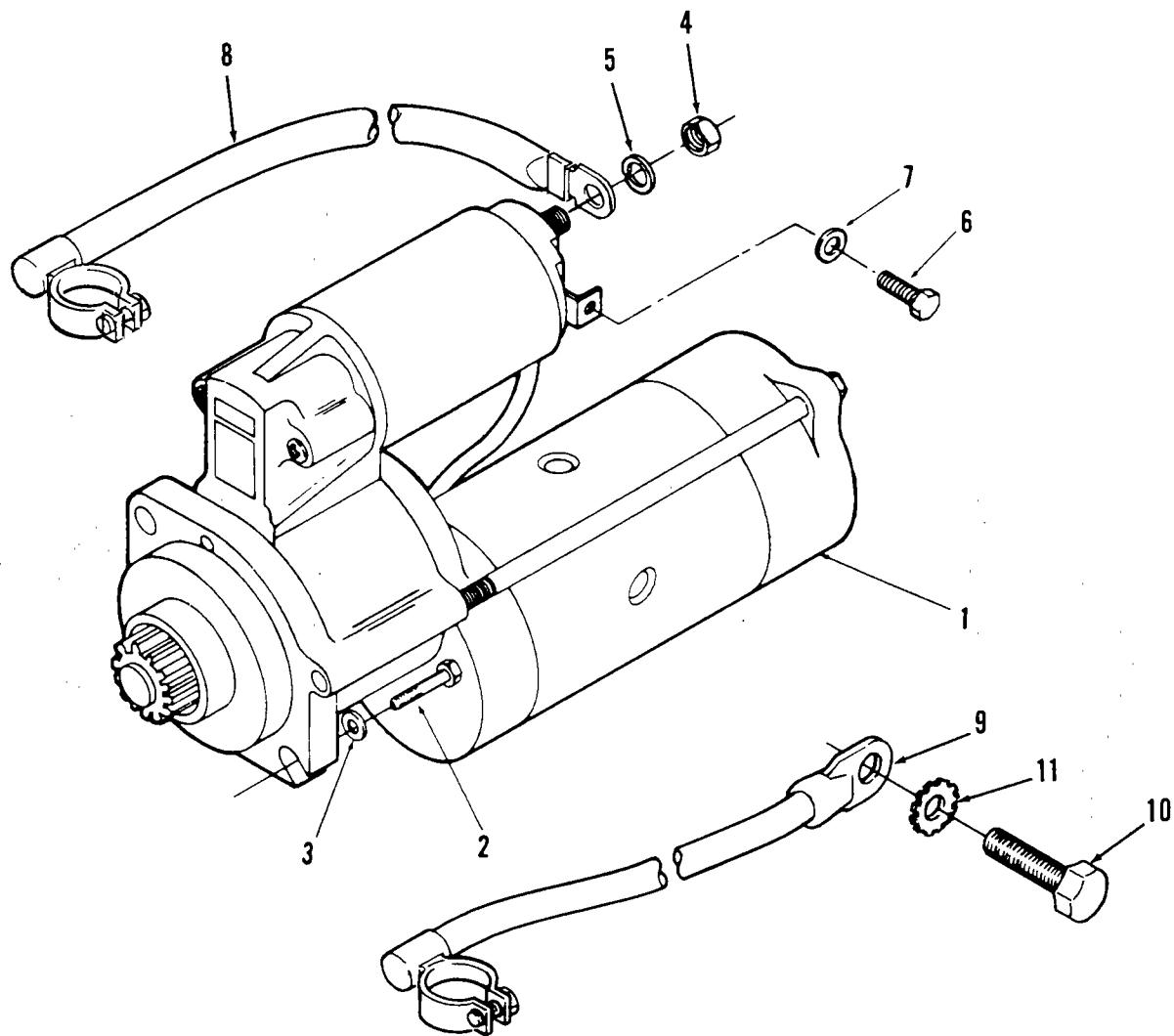
* - Parts Included in 332-1292 Terminal Assembly

Alternator Components



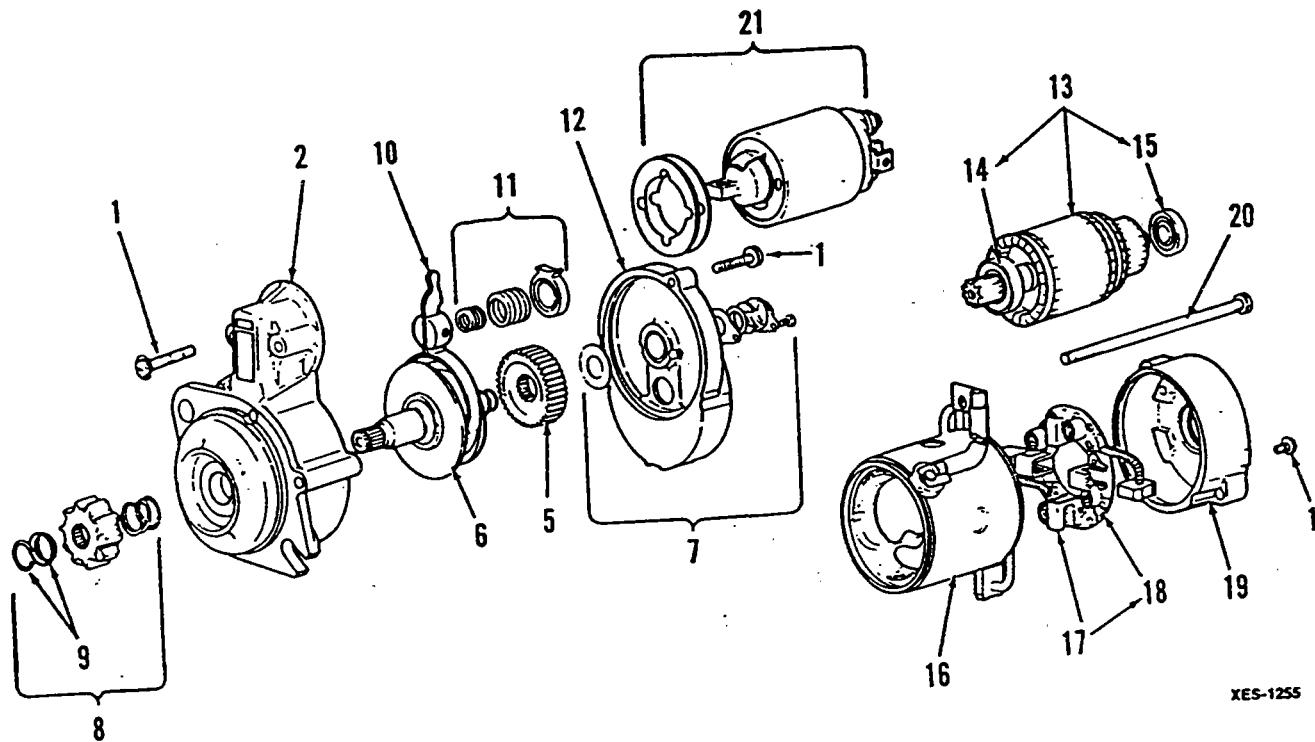
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	191-1525	1	Alternator (Complete) Used on Late Models - Has No Isolation Diodes on Back Side of Alternator (Replaces Early Models With Isolation Diode Assembly on Back Side of Alternator)	4	191-1452	1	Diode, Rectifier - Positive Used on Early Models with Isolation Diode Assembly
1	191-0943	1	Fan, Alternator	191-1559	1	Used on Late Models without Isolation Diode Assembly	
2	191-1454	1	Diode Assembly, Isolation - Used on Early Models	5	191-0659	1	Brush Assembly Used on Early Models with Isolation Diode Assembly
3	191-1453	1	Diode, Rectifier - Negative Used on Early Models with Isolation Diode Assembly	191-1558	1	Used on Late Models without Isolation Diode Assembly	
	191-1560	1	Used on Late Models without Isolation Diode Assembly	6	191-1457	1	Regulator, Voltage Used on Early Models with Isolation Diode Assembly
				191-1557	1	Used on Late Models without Isolation Diode Assembly	
				7	191-1556	1	Diode, Trio - Used on Late Models without Isolator Diode Assembly

Starter



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	191-1394	1	Starter (Includes Switch Terminal Hardware) (See Separate Page for Components)	7	850-2005	1	Washer, Lock - Spring (M5) Solenoid Terminal
2	720-1806	2	Screw, Cap - Flanged Hex Head (M12 x 30 MM)	8	416-0618	1	Cable, Battery - 42" (Positive)
3	740-1010	2	Washer, Flat (M12)	9	416-0530	1	Cable, Battery - 16" (Negative)
4	860-2008	1	Nut, Hex (M8) B+ Terminal	10	800-2110	1	Screw, Cap - Hex Head (M12 x 20 MM)
5	850-2008	1	Washer, Lock - Spring (M8) B+ Terminal	11	856-0013	1	Washer, Lock - EIT (1/2")
6	718-1002	1	Screw, Cap - Hex Head (M5 x 8 MM) Solenoid Terminal				

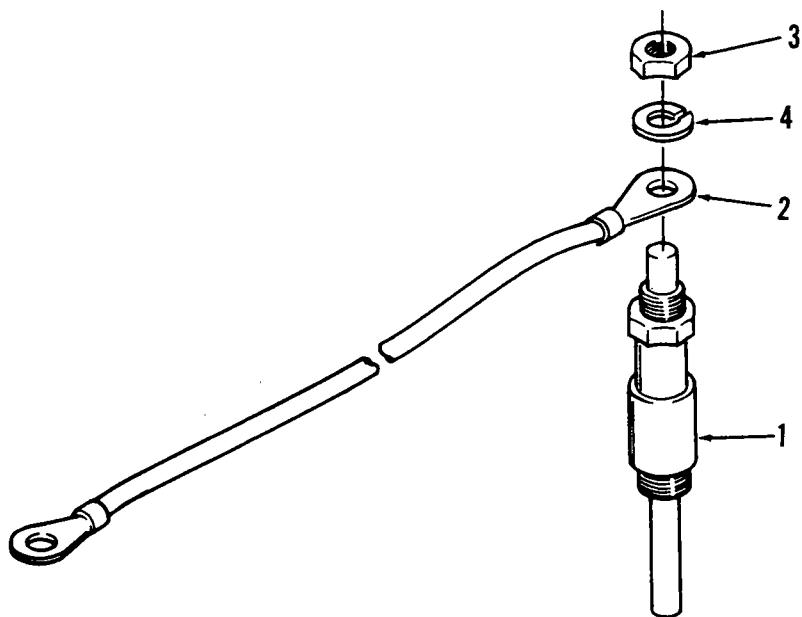
Starter Components



XES-1255

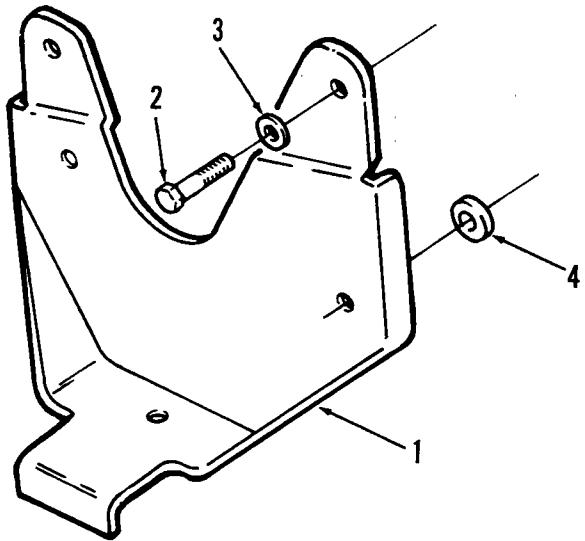
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	191-1394	1	Starter (Complete)	12	191-1439	1	Bracket Assembly, Center
1	191-1450	1	Screw Set	13	191-1438	1	Armature Assembly (Includes Bearings)
2	191-1449	1	Bracket Assembly, Front (Includes Bearing)	14	191-1437	1	Bearing, Center
5	191-1446	1	Gear	15	191-1436	1	Bearing, Rear
6	191-1445	1	Clutch	16	191-1435	1	Yoke Assembly (Includes Pole Shoes, Field Coil and Positive Brushes)
7	191-1444	1	Cover Set (Includes Cover, Plate, Washers, Snap Ring, and Screws)	17	191-1434	1	Holder, Brush (Includes Negative Brushes)
8	191-1443	1	Pinion Set (Includes Pinion, Spring, and Stopper Set)	18	191-1433	4	Spring, Brush
9	191-1442	1	Stopper Set (Includes Stopper and Ring)	19	191-1432	1	Bracket, Rear
10	191-1441	1	Lever Assembly	20	191-1431	1	Bolt Set
11	191-1440	1	Spring Set	21	191-1430	1	Switch Assembly

Glow Plug



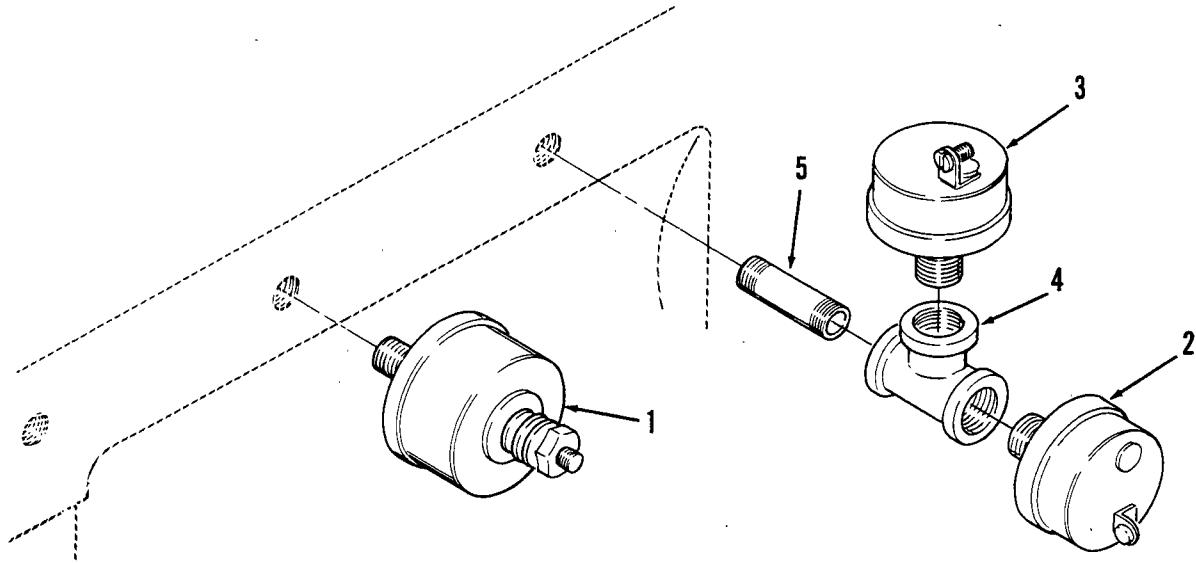
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	333-0220	6	Plug, Glow	3	750-1002	6	Nut, Hex (M5)
2	336-4131	5	Lead, Glow Plug	4	850-2005	6	Washer, Lock - Spring (M5)

Front Engine Mount



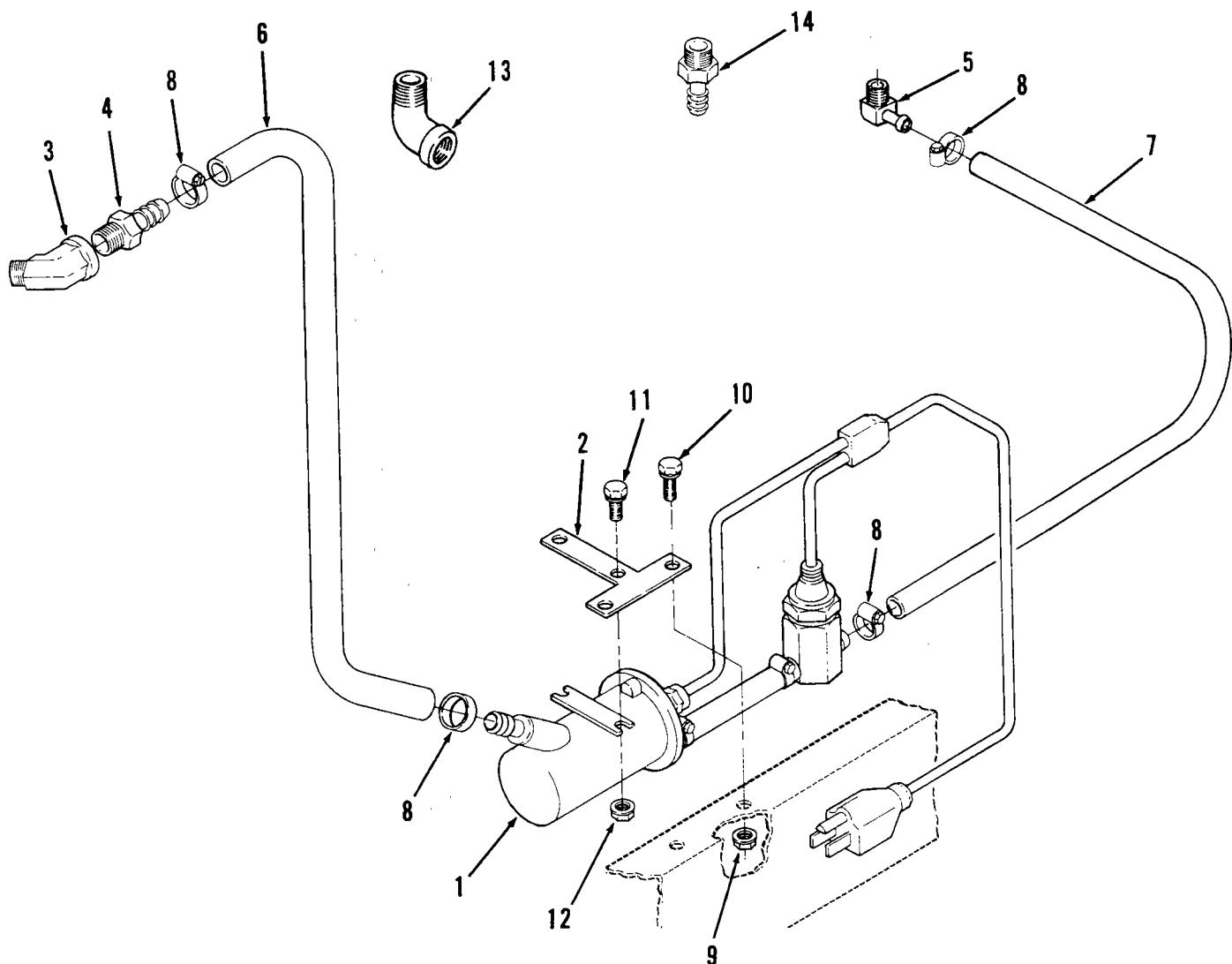
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	403-1925	1	Bracket, Mount	3	740-1010	4	Washer, Flat (M12)
2	718-1086	2	Screw, Cap - Hex Head M12 x 90 MM (Top)	4	403-1932	2	Spacer, Bracket Mounting
	718-1802	2	M12 x 95 MM (Bottom)				

Oil Pressure Switch



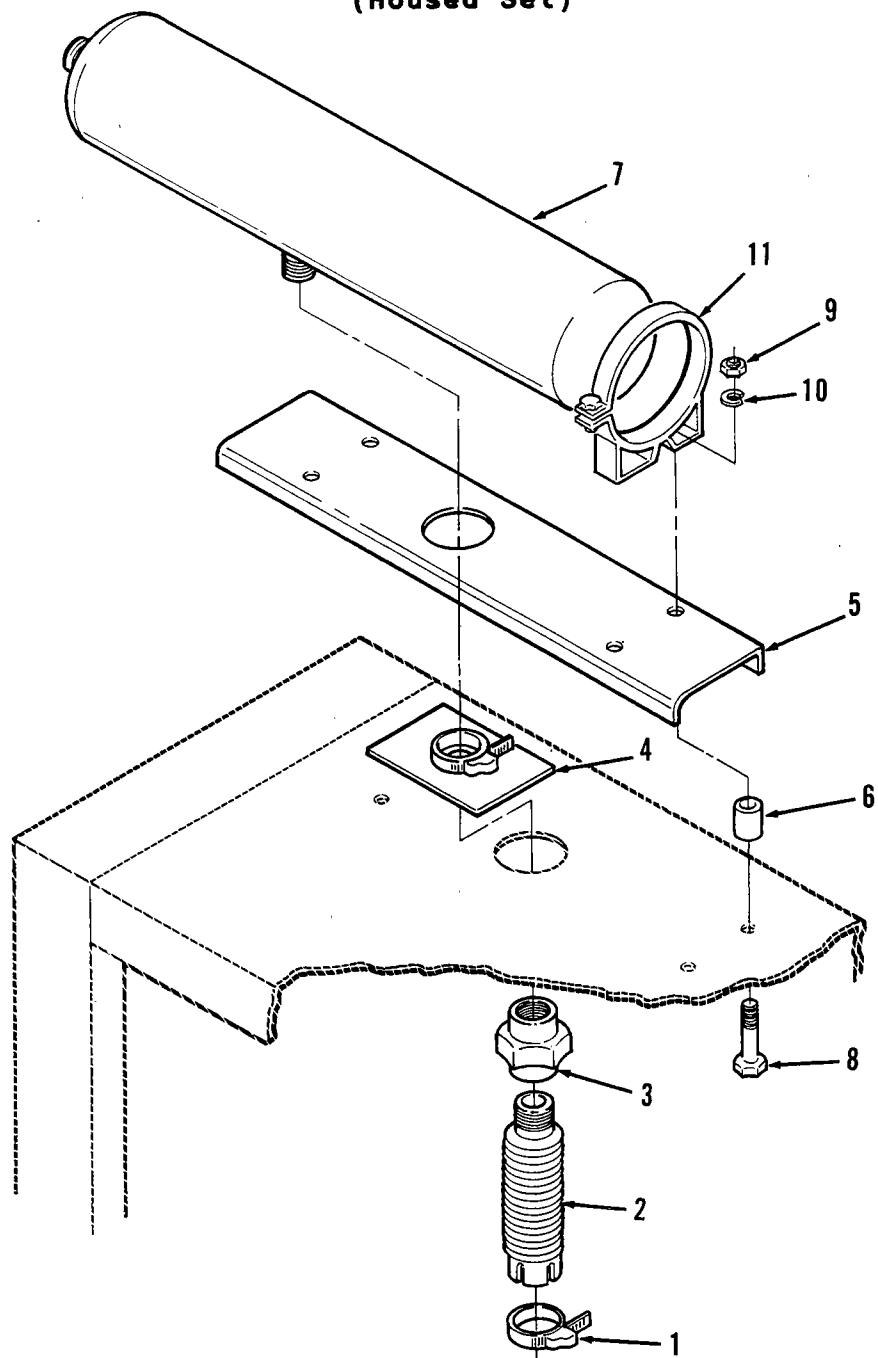
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	193-0244	1	Sender, Oil Pressure (E1)	4	505-0059	1	Tee, Pipe (1/8") (Controls with 9 Indicator Lights)
2	309-0169	1	Switch, Oil Pressure (S3) Closes at 14 lbs. Descending	5	505-0098	1	Nipple, Pipe (1/8" x 3/4") (Controls with 9 Indicator Lights)
3	309-0272	1	Switch, Oil Pressure (S4 - Pre-Alarm) Closes at 20 lbs. Descending (Controls with 9 Indicator Lights)				

Engine Coolant Heater



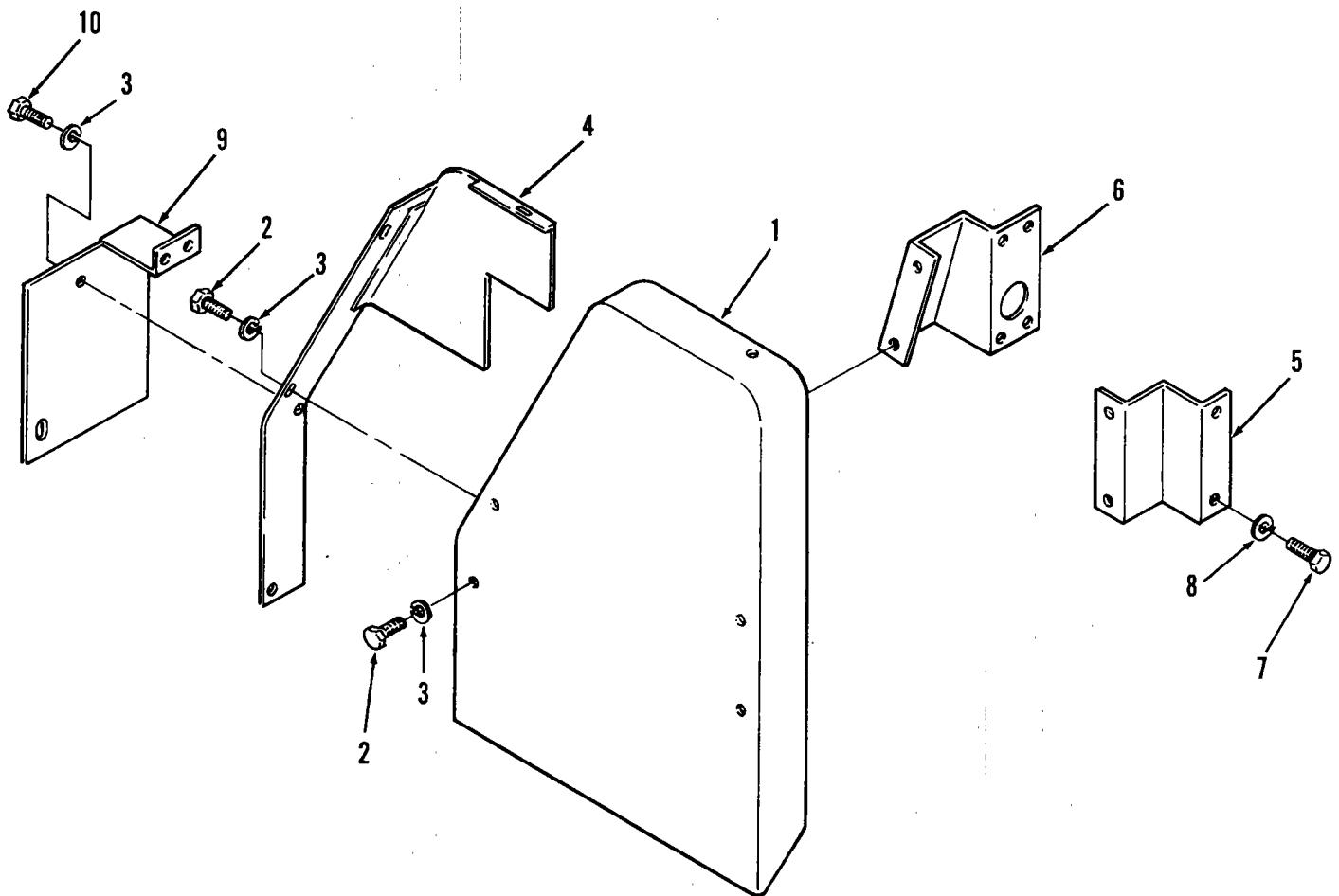
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	333-0255-03	1	Heater, Engine Coolant 1250 Watt, 120 Volt AC. Single Phase	9	870-2056	2	Nut, Self-locking - Flange (M10)
	333-0255-06	1	1250 Watt, 240 Volt AC. Single Phase	10	821-2061	2	Screw, Self-locking - Flange (M10 x 25 MM)
2	130-2246	1	Plate, Mounting	11	821-2033	2	Screw, Self-locking - Flange (M6 x 16 MM)
3	502-0156	1	Elbow, Street - 45° (1/4")	12	870-2054	2	Nut, Self-locking - Flange (M6)
4	502-0613	1	Connector, Hose (1/4" Pipe to 5/8" Hose)	13	505-0120	1	Elbow, Pipe - 90° (3/8") Used on some early Spec A models
5	502-0817	1	Elbow, Pipe to Hose - 90° (3/8" Pipe to 5/8" Hose)	14	502-0816	1	Connector, Hose (3/8" Pipe to 5/8" Hose) Used on some early Spec A models
6	503-0833	1	Hose, Rubber (5/8" ID x 19")				
7	503-1169	1	Hose, Rubber (5/8" ID x 37")				
8	503-0183	4	Clamp, Hose				

**Muffler
(Housed Set)**



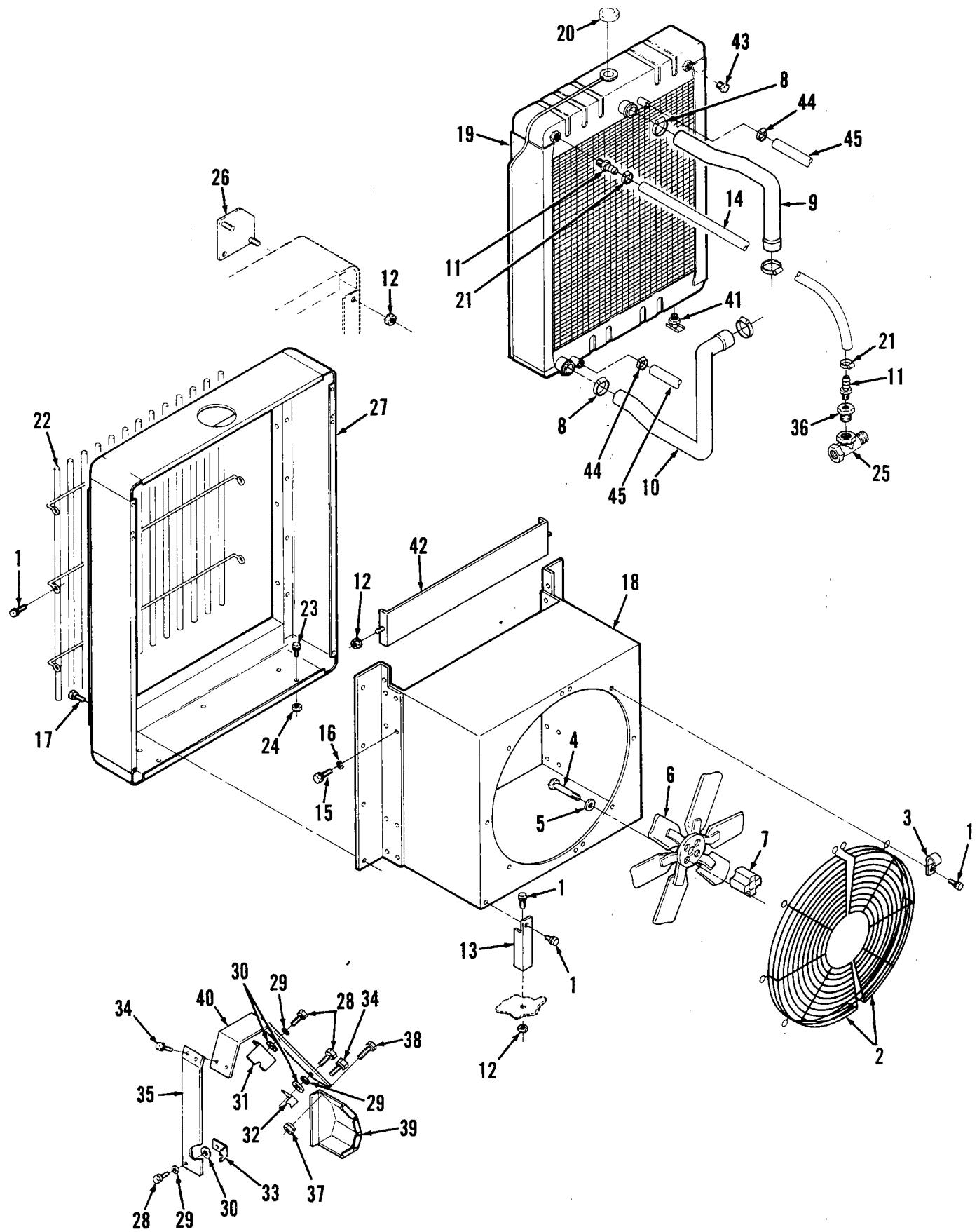
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	503-0965	1	Clamp, Hose	7	155-1994	1	Muffler, Exhaust
2	155-2041	1	Tube, Exhaust - Flexible	8	800-2067	4	Screw, Cap - Hex Head (M8 x 70 MM)
3	505-1341	1	Union, Pipe (2-1/2")	9	870-2055	4	Nut, Hex - Self-locking (M8)
4	155-2020	1	Shield, Rain	10	526-2100	8	Washer, Flat (M8)
5	155-1995	1	Shield, Heat	11	140-0649	2	Band, Mounting
6	155-1430	4	Spacer				

**Belt Guard
(With Remote Radiator)**



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	130-2792	1	Panel, Front	7	800-2056	2	Screw, Cap - Hex Head (M8 x 16 MM)
2	800-2029	8	Screw, Cap - Hex Head (M6 x 12 MM)	8	850-2008	2	Washer, Lock - Spring (M8)
3	850-2006	9	Washer, Lock - Spring (M6)	9	191-1678	1	Guard, Alternator
4	130-2788	1	Panel, Side	10	718-1021	1	Screw, Cap - Hex Head (M6 x 20 MM)
5	130-2785	1	Bracket, Belt Guard (Left Hand)				
6	130-2786	1	Bracket, Belt Guard (Right Hand)				

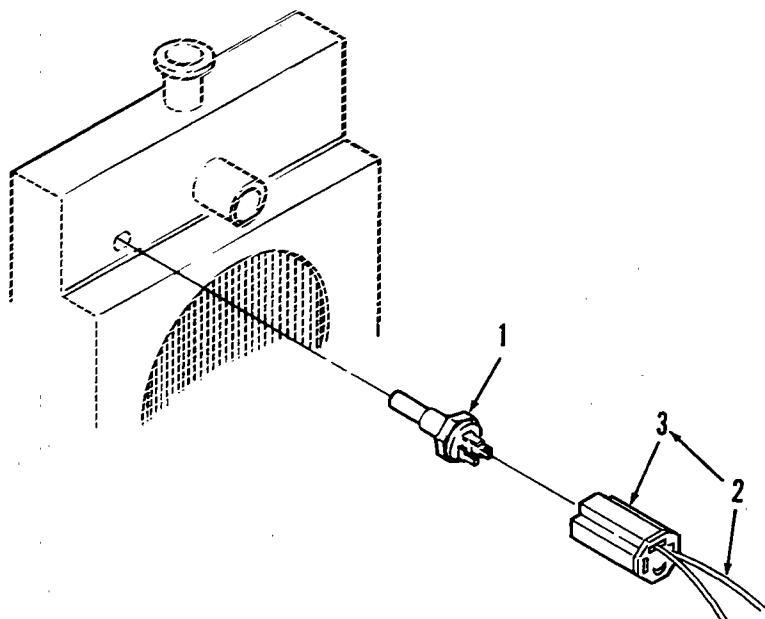
Cooling System



Cooling System

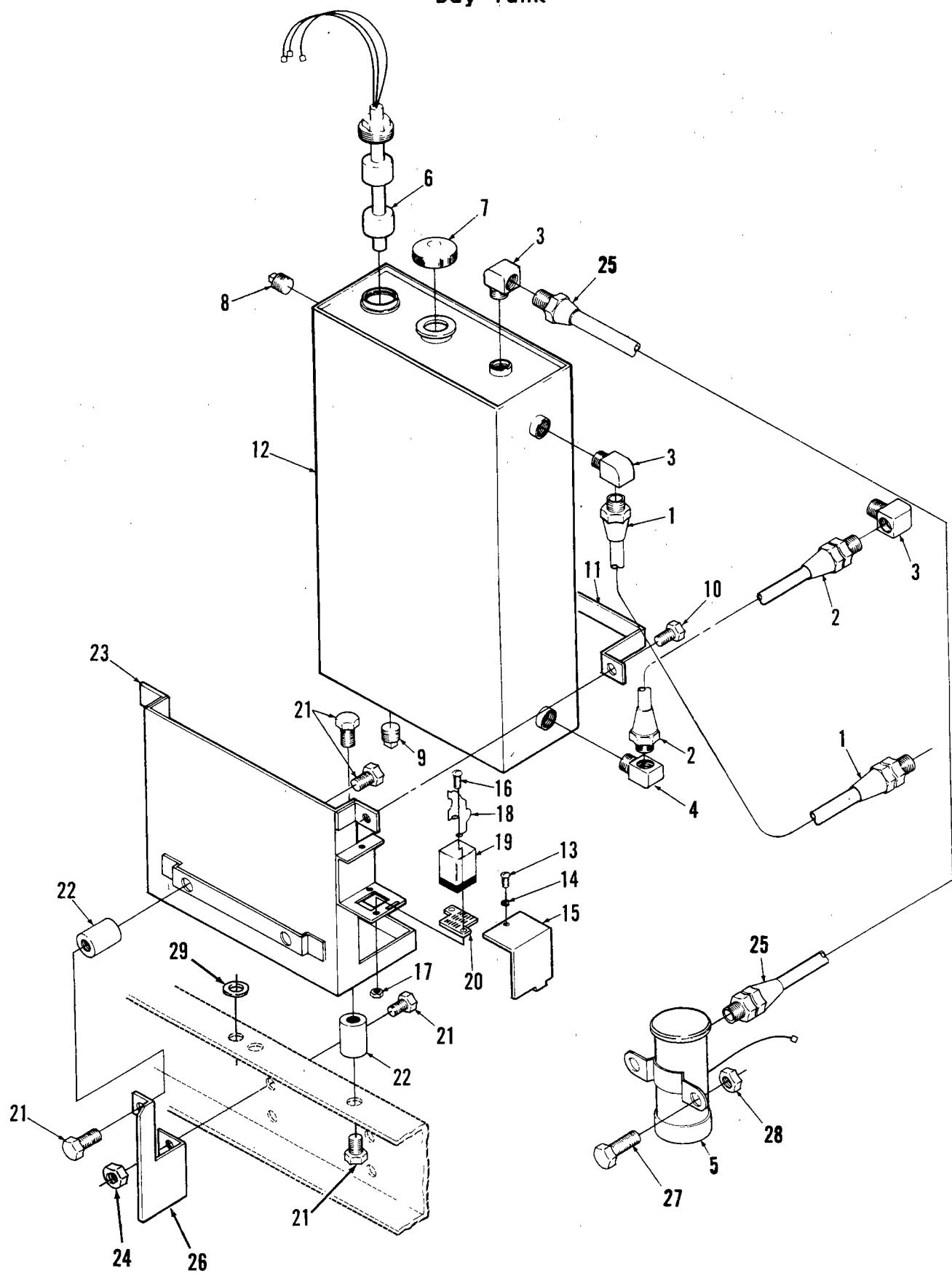
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	821-2033	20	Screw, Self-locking - Hex Washer Head (M6 x 16 MM)	24	870-2056	5	Nut, Self-locking - Hex Washer Head (M10)
2	130-2432	2	Guard, Fan	25	502-0812	1	Tee, Male Run (3/8")
3	332-2634	2	Clamp, "J" - Hose Restraint	26	405-3240	4	Support, Corner
4	800-2074	4	Screw, Cap - Hex Head (M8 x 120 MM)	27	405-3202	1	Housing - Front
5	526-2100	4	Washer, Flat (M8)	28	821-2033	3	Screw, Self-locking - Hex Washer Head (M6 x 16 MM)
6	130-2433	1	Fan (22")	29	402-0546	3	Insert, Isolator
7	130-1877	1	Spacer, Fan (102 MM)	30	508-0248	3	Grommet, Rubber
8	503-0365	4	Clamp, Hose	31	191-1580	1	Bracket, Support - Belt Guard
9	503-1342	1	Hose, Radiator - Upper	32	191-1593	1	Bracket, Support - Belt Guard
10	503-1343	1	Hose, Radiator - Lower	33	191-1590	1	Bracket, Support - Belt Guard
11	502-0941	2	Connector, Hose - Barbed	34	821-2032	4	Screw, Self-locking - Hex Washer Head (M16 x 12 MM)
12	870-2054	12	Nut, Self-locking - Hex Washer Head (M6)	35	191-1638	1	Guard, Belt
13	130-2291	2	Support, Fan Shroud	36	505-0017	1	Bushing, Reducer (3/8" to 1/4")
14	503-1428	1	Hose (36")	37	870-2054	2	Nut, Self-locking - Hex Washer Head (M16)
15	800-2056	16	Screw, Cap - Hex Head (M8 x 16 MM)	38	821-0010	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1/2")
16	850-2008	16	Washer, Lock - Spring (M8)	39	191-1539	1	Guard, Belt
17	821-2032	8	Screw, Self-locking - Hex Washer Head (M6 x 12 MM)	40	191-1637	1	Guard, Belt
18	130-2377	1	Shroud, Fan	41	504-0003	1	Cock, Drain (1/4")
19	130-2431	1	Radiator	42	130-2441	1	Insert, Shroud
20	130-2003	1	Cap, Pressure	43	502-0153	1	Plug, Hex Head (1/4")
21	503-0685	2	Clamp, Hose	44	503-0183	2	Clamp, Hose
22	405-3207	1	Grille	45	503-1427	1	Hose - Special (67")
23	821-2061	5	Screw, Self-locking - Hex Washer Head (M10 x 25 MM)				

Low Coolant Level Switch



REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	193-0322	1	Switch - Coolant Level (S7)
2	338-1691	1	Harness, Wiring (Includes Housing)
3	323-1236	1	Housing, Connector

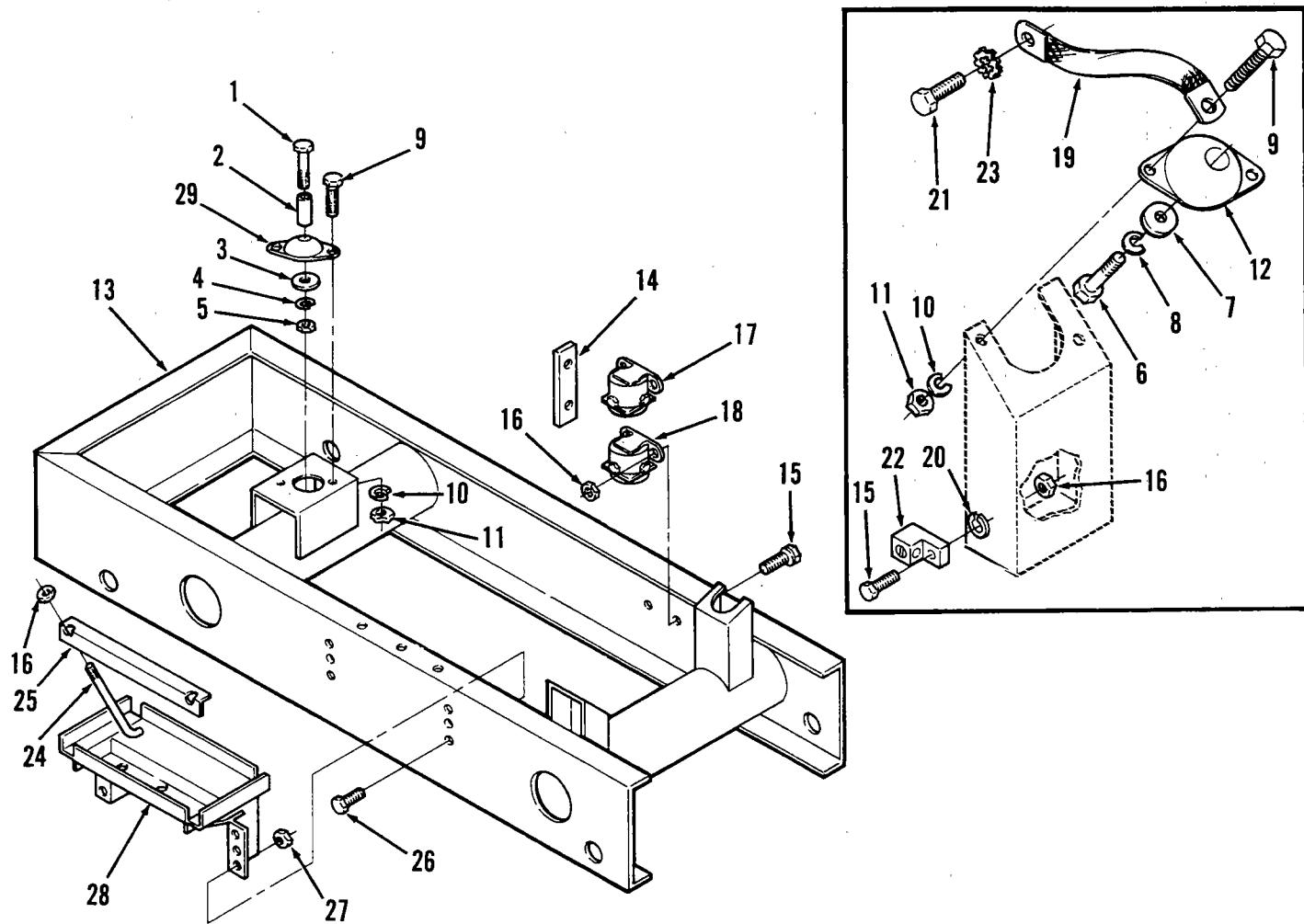
Day Tank



Day Tank

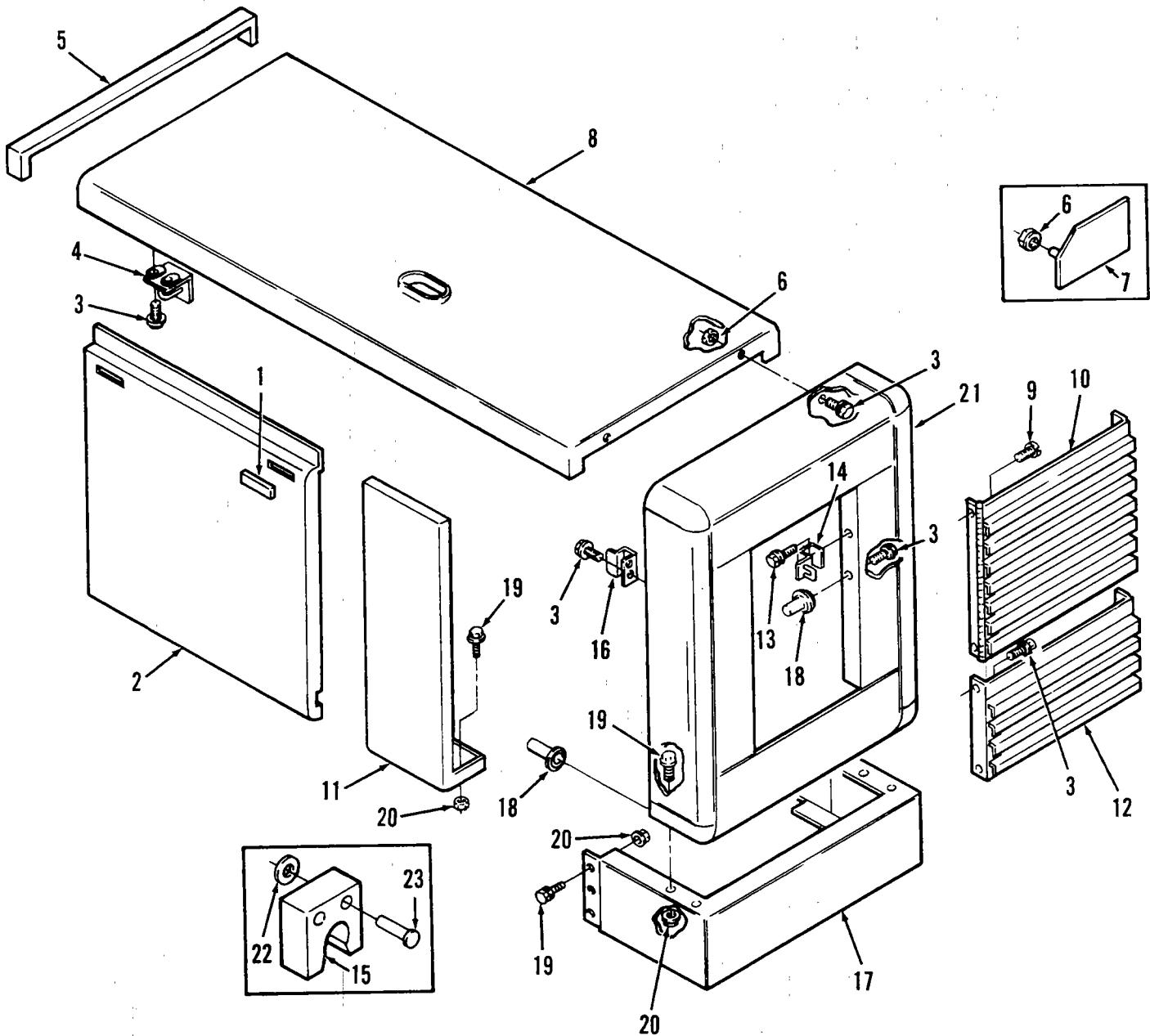
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	501-0528	1	Line, Fuel - Flexible (45")	16	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")
2	501-0491	1	Line, Fuel - Flexible (32")	17	870-1183	2	Nut, Self-locking - Hex
3	502-0916	3	Elbow, Inverted Male - 90°				Washer Head With ET (#6-32)
4	502-0054	1	Elbow, Street - 90°	18	307-1157	1	Spring, Holddown - Relay
5	149-1828	1	Pump, Fuel (12 Volt DC)	19	307-1058	1	Relay (12 Volt DC)
6	415-0321	1	Switch, Float - Liquid Level (Includes Mounting Plug)	20	323-0765	1	Socket, Relay
7	159-0007	1	Cap, Fuel Tank	21	821-0014	12	Screw, Self-locking - Hex
8	505-0054	1	Plug, Pipe - Square Head (1/4")	22	402-0078	4	Washer Head (5/16-18 x 1/2")
9	505-0110	1	Plug, Pipe - Square Head (3/8")	23	415-0544	1	Mount, Vibration
10	821-0013	2	Screw, Self-locking - Hex Washer Head (1/4-20 x 1")	24	870-0257	4	Bracket, Mounting
11	415-0451	1	Strap, Retaining - Tank	25	501-0492	1	Nut, Self-locking - Hex
12	415-0445	1	Tank, Fuel - Day (Includes Cap) (3-1/2 Gallons)	26	415-0545	2	Washer Head (5/16-18)
13	813-0098	1	Screw, Machine - Round Head (#10-32 x 3/8")	27	821-0018	2	Line, Fuel - Flexible (20")
14	850-0030	1	Washer, Lock - Spring (#10)	28	870-0212	2	Bracket, Support - Fuel Tank
15	415-0326	1	Cover, Access - Relay	29	526-0113	1	Screw, Self-locking - Hex
							Washer Head (1/4-20)
							Washer Head (1/4-20)
							Washer Head (5/16") Used on
							Housed Sets

Chassis



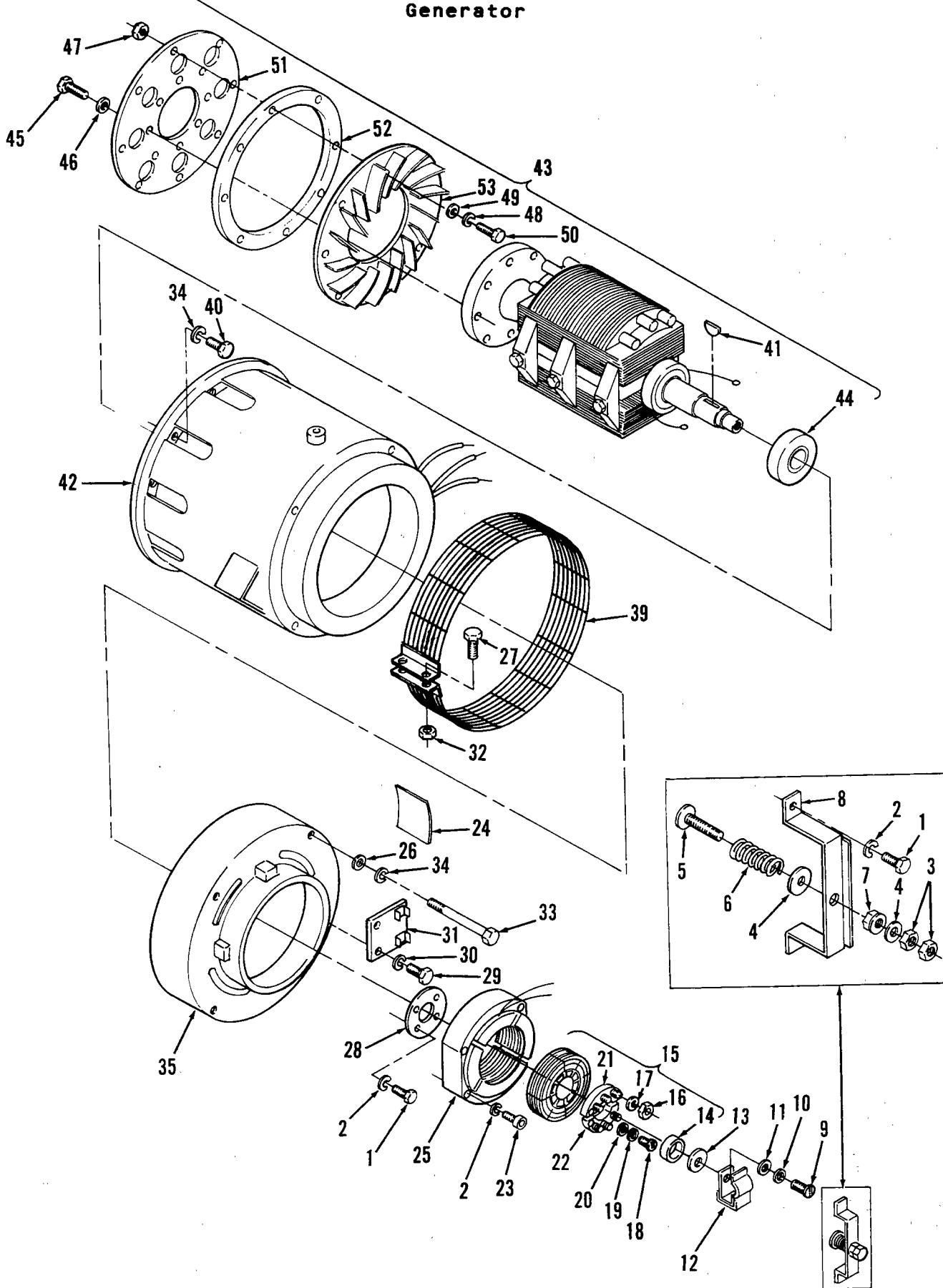
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-2126	1	Screw, Cap - Hex Head (M12 x 110 MM)	16	870-2054	7	Nut, Self-locking - Hex Washer Head (M6)
2	402-0542	1	Insert, Isolator	17	307-1031	1	Relay, Solenoid - Heater (Upper) (K2)
3	526-0172	1	Washer, Flat (1/2" ID x 2-1/4" OD x 1/4" Thk)	18	307-1166	1	Relay, Solenoid - Start (Lower) (K1)
4	850-2012	1	Washer, Lock - Spring (M12)	19	337-0090	1	Strap, Ground - Engine
5	860-2010	1	Nut, Hex (M12)	20	853-2006	1	Washer, Lock - EIT (M6)
6	800-2186	2	Screw, Cap - Hex Head (M16 x 120 MM)	21	800-2110	1	Screw, Cap - Hex Head (M12 x 20 MM)
7	526-0242	2	Washer, Flat (11/16" ID x 2-7/8" OD x 1/4" Thk)	22	332-1473	1	Lug, Solderless
8	850-2066	2	Washer, Lock - Spring (M16)	23	856-0013	1	Washer, Lock - EIT (1/2")
9	800-2111	6	Screw, Cap - Hex Head (M12 x 25 MM)	24	416-0828	2	Rod, J Hook (M6)
10	850-2012	6	Washer, Lock - Spring (M12)	25	416-0830	1	Bracket, Holddown - Battery
11	860-2010	6	Nut, Hex (M12)	26	821-2047	9	Screw, Self-locking - Hex Washer Head (M8 x 25 MM)
12	402-0540	2	Mount, Vibration	27	870-2055	9	Nut, Self-locking - Hex Washer Head (M8)
13	403-2171	1	Skid	28	416-0840	1	Tray, Battery
14	332-0602	1	Jumper, Solenoid	29	402-0541	1	Mount, Vibration
15	821-2036	5	Screw, Self-locking - Hex Washer Head (M6 x 30 MM)				

Housing



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	406-0561	8	Latch, Door	12	405-3082	1	Grille
2	405-3302	4	Door	13	821-2020	2	Screw, Self-locking - Hex Washer Head (M5 x 12 MM)
3	821-2033	50	Screw, Self-locking - Hex Washer Head (M6 x 16 MM)	14	406-0555	1	Latch, Cover
4	406-0552	4	Latch, Door	15	405-1872	8	Clip, Door
5	895-0195	-	Stripping, Weather - Bulk (Order by the foot - 8 foot required)	16	406-0553	8	Catch, Door
6	870-2054	22	Nut, Self-locking - Hex Washer Head (M6)	17	403-2190	1	Skid, Rear
7	405-3240	8	Support, Corner	18	870-2026	10	Nut, Weld (M6)
8	405-3304	1	Panel, Top	19	821-2061	15	Screw, Self-locking - Hex Washer Head (M10 x 25 MM)
9	822-3073	3	Screw, Machine - Pan Head (M4 x 10 MM)	20	870-2056	15	Nut, Self-locking - Hex Washer Head (M10)
10	405-2677	1	Cover, Control	21	405-3241	1	Panel, Rear
11	405-3247	2	Post, Door	22	526-0003	16	Washer, Flat (#8)
				23	818-0150	16	Rivet

Generator



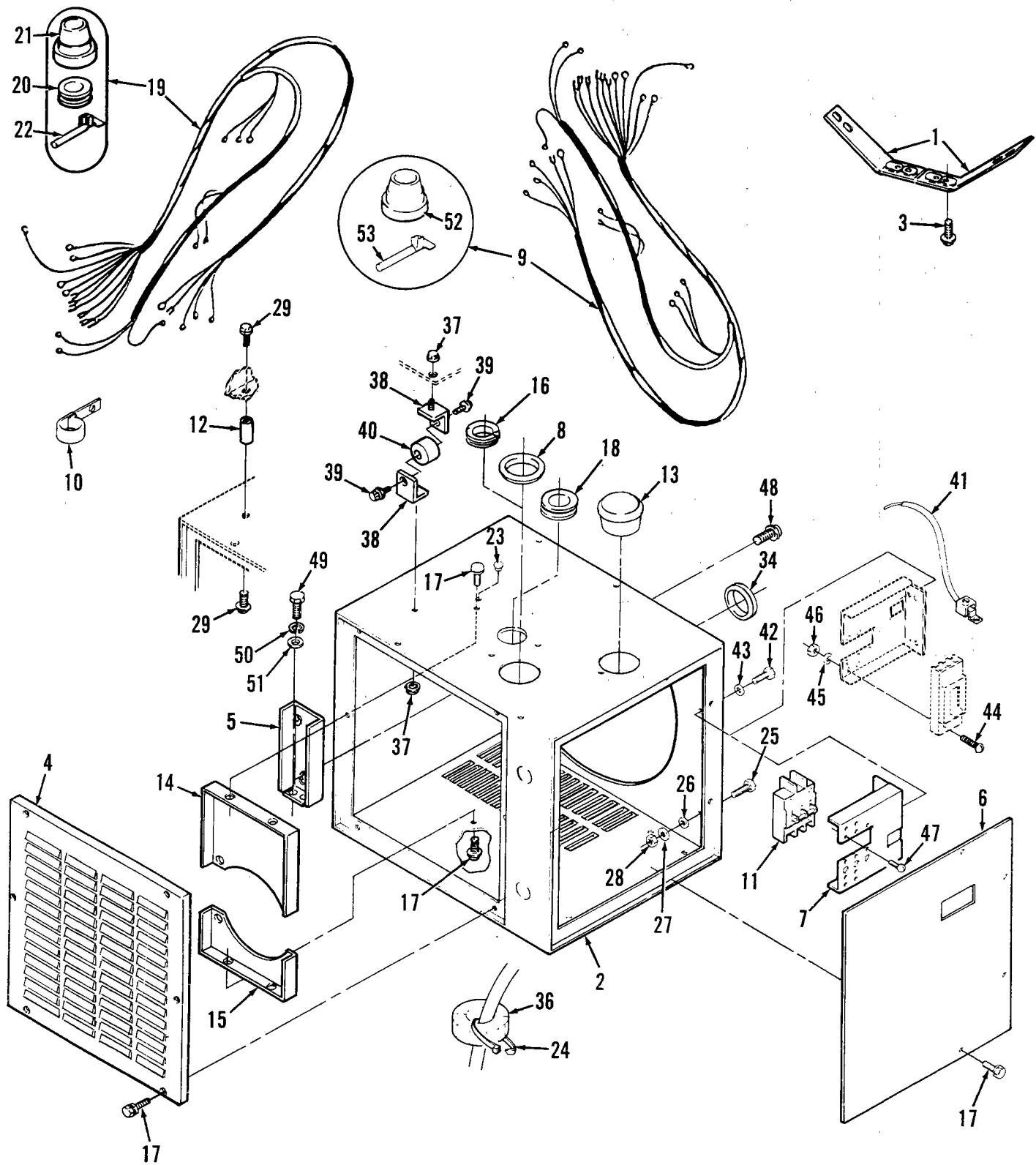
Generator

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	800-2029	6	Screw, Cap - Hex Head (M6 x 12 MM)	28	232-2959	1	Cover, Bearing
2	850-2006	10	Washer, Lock - Spring (M6)	29	800-2004	2	Screw, Cap - Hex Head (M5 x 12 MM)
3	860-2006	2	Nut, Hex (M5)	30	850-2005	2	Washer, Lock - Spring (M5)
4	526-2060	2	Washer, Flat (M5)	31	232-2418	1	Board, Terminal
5	150-1962	1	Point, Contact	32	870-0212	2	Nut, Hex (1/4-20)
6	150-1964	1	Spring	33	800-2100	4	Screw, Cap - Hex Head (M10 x 100 MM)
7	870-0171	1	Nut, Insulating	34	850-2010	16	Washer, Lock - Spring (M10)
8	150-1963	1	Bracket, Mounting	35	211-0367	1	Bell, End
9	720-1057	1	Screw, Cap - Hex Head (M10 x 40 MM)	39	234-0819	1	Screen, Fan
10	853-2010	1	Washer, Lock - ET (M10)	40	800-2088	12	Screw, Cap - Hex Head (M10 x 35 MM)
11	526-2120	3	Washer, Flat (M10)	41	515-0158	1	Key - Exciter Rotor
12	150-2038	1	Switch, Overspeed	42	220-4068	1	Stator, Generator Code 9XR
13	526-2129	1	Washer, Flat (11 MM ID x 45 MM OD x 5 MM Thk)		220-3818	1	Code 15R
14	232-2929	1	Spacer, Exciter		220-3861	1	Code 51SR
15	201-2299	1	Rotor Assembly, Exciter (Includes Parts Marked *)	43	201-3103	1	Rotor Assembly, Generator (Includes Parts Marked #)
16	870-0131	6	*Nut, Self-locking - Hex With ET Lockwasher (#10-32)	44	510-0063	1	#Bearing, Ball
17	526-0008	6	*Washer, Flat (#10)	45	800-2112	8	#Screw, Cap - Hex Head (M12 x 30 MM)
18	813-0100	4	*Screw, Machine - Round Head (#10-32 x 1/2")	46	526-2148	8	#Washer, Flat (M12)
19	853-0008	4	*Washer, Lock - ET (#10)	47	860-2009	8	#Nut, Hex (M10)
20	526-0008	4	*Washer, Flat (#10)	48	850-2010	8	#Washer, Lock - Spring (M10)
21	358-0069	1	*Rectifier Assembly - Positive	49	526-2121	8	#Washer, Flat (M10)
22	358-0070	1	*Rectifier Assembly - Negative	50	800-2533	8	#Screw, Cap - Hex Head (M10 x 55 MM)
23	802-2073	4	Screw, Cap - Socket Head (M6 x 45 MM)	51	232-3071	1	#Disk, Drive
24	508-0239	-	Edging - Bulk (Order by the foot - 1 foot required)	52	232-3082	1	#Spacer
25	220-3968	1	Stator, Exciter	53	205-0161	1	#Fan
26	526-2121	4	Washer, Flat (#10)				
27	800-0012	2	Screw, Cap - Hex Head (1/4-20 x 1-3/4")				

* - Parts Included in 201-2299 Exciter Rotor
Assembly

- Parts Included in 201-3103 Generator Rotor
Assembly

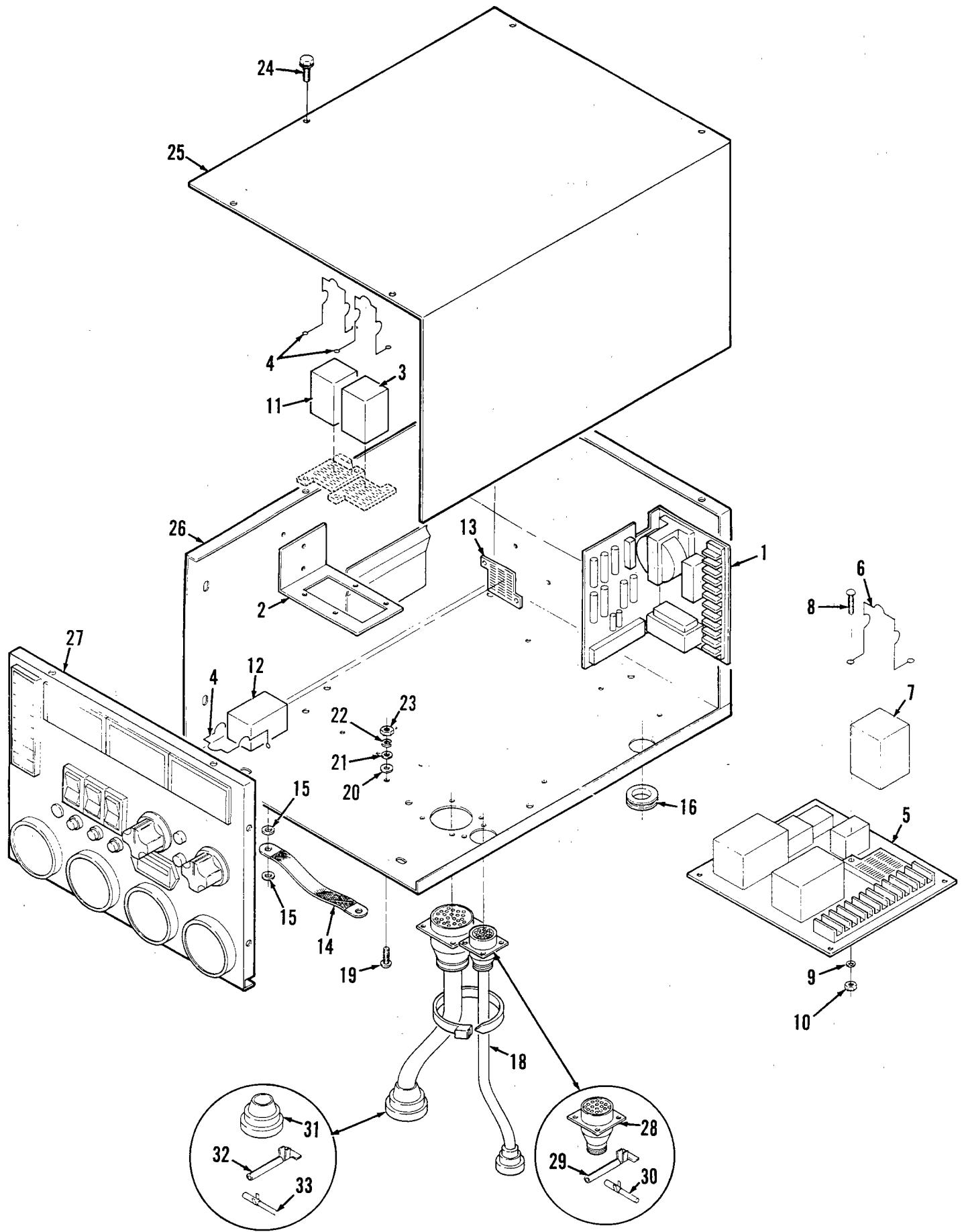
Output Box



Output Box

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1	301-9037	2	Bracket, Support - Output Box - Used on some early models	18	508-0051	1	Grommet, Rubber - 2" Hole (Spec B)
2			Box, Output	19	338-1710	1	Harness, Wiring - Engine to Control (Includes Grommet, Plug and Sockets)
	301-8113	1	Spec A	20	508-0258	1	Grommet, Rubber - 1-1/2" Hole
	301-8978	1	Spec B	21	323-1134	1	Plug, Circular (16 Pin) (P1)
3	821-2045	4	Screw, Self-locking - Hex Washer Head (M8 x 16 MM)	22	323-1192	4	Socket, Female
4	301-8112	1	Grille	23	323-1195	10	14-12 Gauge Wire
5	301-9038	1	Bracket, Output Box Cover	24	517-0169	4	18-14 Gauge Wire
6	301-8114	1	Without Circuit Breaker Opening	25	517-0169	12	Plug, Plastic - 3/8" Hole Spec A
			With Circuit Breaker Opening	26	332-0941	3	Spec B
	301-8896	1	All Except Sets With 250 Amp, 240 Volt Circuit Breaker	27	800-2035	1	Tie, Cable
			Sets With 250 Amp, 240 Volt Circuit Breaker	28	856-0006	1	Screw, Cap - Hex Head (M6 x 25 MM) Grounding Stud
			Used With Westinghouse Circuit Breaker	29	850-2006	2	Washer, Lock - EIT (1/4")
	301-9307	1	Used With Westinghouse Circuit Breaker	30	860-2007	2	Washer, Flat (M6)
	301-9738	1	Used With General Electric Circuit Breaker	31	821-0014	8	Nut, Hex (M6)
7			Bracket, Mounting - Circuit Breaker	32	508-0055	1	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2") Spec A
	301-7572	1	All Except Sets With 250 Amp, 240 Volt Circuit Breaker	33	302-0078	3	Grommet, Rubber - 1-3/4" Hole
			Sets With 250 Amp, 240 Volt Circuit Breaker	34	302-0107	3	Transformer, Current (CT21, 22, 23)
	301-9305	1	Used With Westinghouse Circuit Breaker	35	302-0607	3	Voltage Code 9XR (Ratio 100/5, 1VA)
	301-9736	1	Used With General Electric Circuit Breaker	36	870-0257	8	Voltage Code 15R, 515R 63.0 DL6TB (Ratio 300/5, 1VA)
8	508-0257	1	Grommet, Plastic - 3-1/2" Hole	37	301-8955	8	70.0 DL6TB (Ratio 400/5, 10VA)
9	338-1647	1	Harness, Wiring - Generator to Control (Includes Plug and Pins)	38	821-0014	8	Nut, Self-locking - Hex Washer Head (5/16-18 x Spec B)
10	332-1356	3	Clamp, Insulated - DC Wiring Harness	39	402-0527	4	Bracket - Spec B
11			Breaker, Circuit (CB4 or CB5)	40	226-3423	3	Screw, Self-locking - Hex Washer Head (5/16-18 x 1/2") Spec B
	320-1313	1	Voltage Code 15R 125 Amp, 480 Volt	41	800-0003	2	Isolator, Vibration - Spec B
	320-0349	1	225 Amp, 240 Volt	42	460-0040	2	Lead, Generator Output
	320-0422	1	250 Amp, 240 Volt	43	812-0094	4	Extension (Quantity may vary)
	320-1313	1	Voltage Code 515R - 125 Amp, 480 Volt	44	850-0025	4	Screw, Cap - Hex Head (1/4-20 x 1/2")
12	402-0070	4	Dampener, Vibration - Spec A	45	860-0008	4	Washer, Lock - Spring (1/4")
13	517-0190	1	Plug, Plastic - 3-1/2" Hole	46	812-0063	6	Screw, Machine - Round Head (#8-32 x 3-5/8")
14			Bracket - Upper	47	821-2045	3	Washer, Lock - Spring (#8)
	301-8110	1	Spec A	48	800-2054	2	Nut, Hex (#8-32)
	301-8951	1	Spec B	49	850-2008	2	Screw, Machine - Round Head (#6-32 x 1/2")
15			Bracket - Lower	50	526-2101	2	Screw, Self-locking - Hex Washer Head (M8 x 16 MM)
	301-8109	1	Spec A	51	323-1136	1	Screw, Cap - Hex Head (M8 x 14 MM)
	301-8952	1	Spec B	52	323-1228	11	Washer, Lock - Spring (M8)
16	508-1010	1	Channel, Rubber - Used on some early models	53	323-1228	1	Washer, Flat (M8)
17	821-2032	14	Screw, Self-locking - Hex Washer Head (M6 x 12 MM)				Plug, Circular (14 Pin) (P2)
							Pin, Male

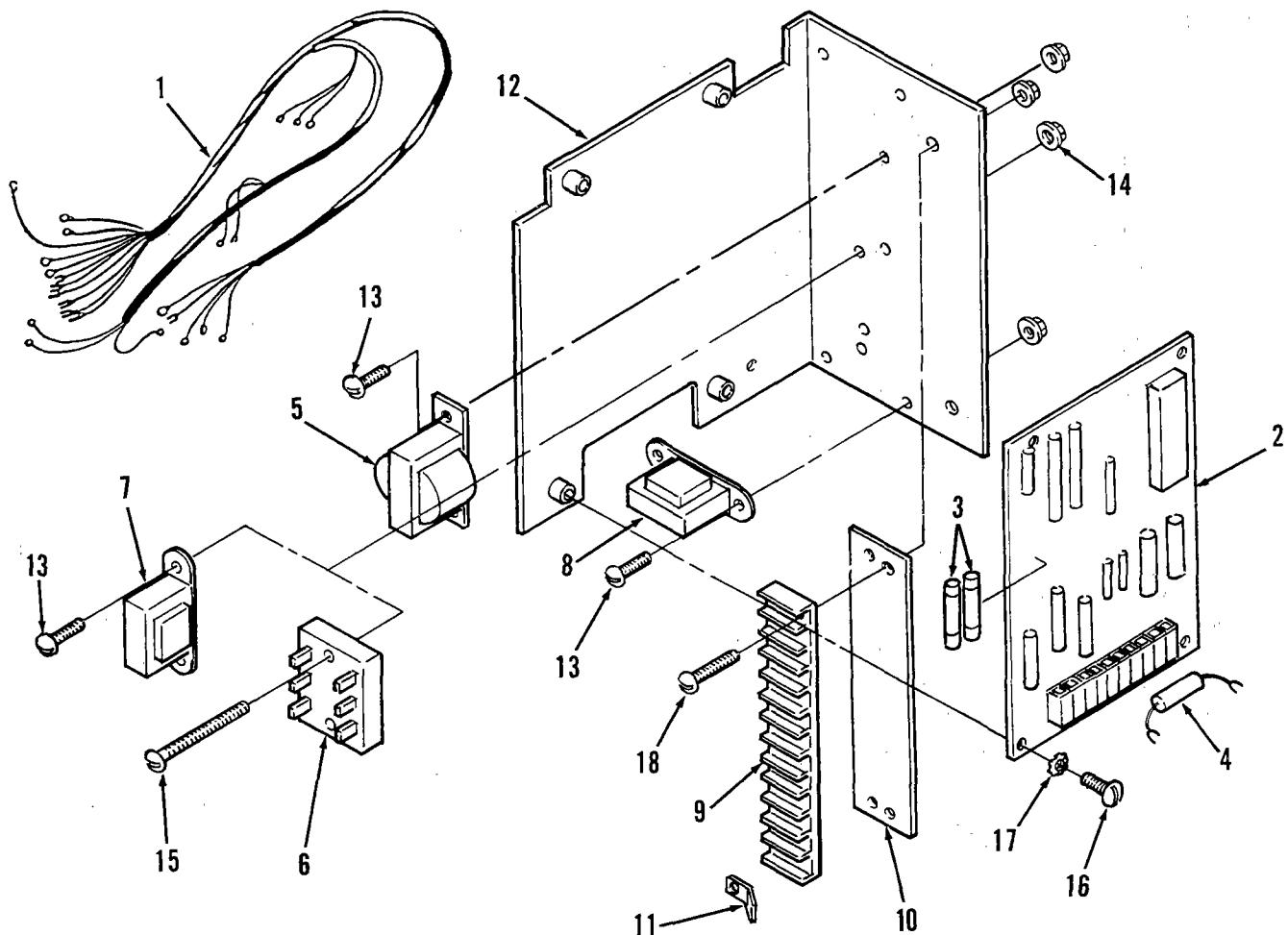
Control



Control

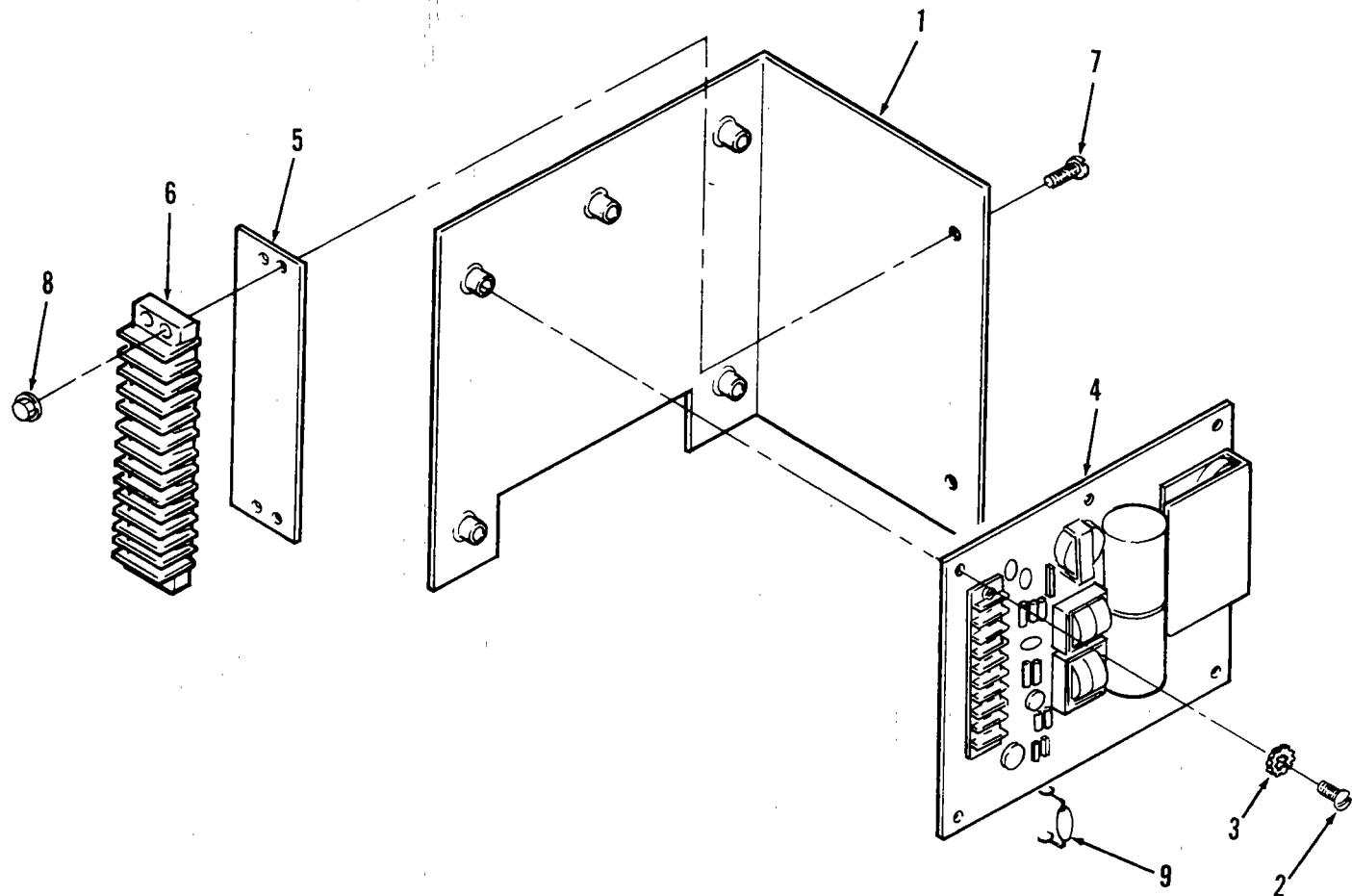
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION	
1			Regulator Assembly, Voltage (See Separate Page for Components) Standard (VRA21)	18	338-1427	1	Harness, Wiring - Remote Control (30')	
	305-0693-01	1	Fixed Resistor	19	815-0105	1	Screw, Machine - Round Head (Brass) (#10-32 x 1") Grounding Stud	
	305-0693-02	1	External Adjust	20	526-0063	2	Washer, Flat - Brass (#10)	
	305-0695-01	1	Switching Regulator (VRA21)	21	856-0003	2	Washer, Lock - EIT (#10)	
	305-0695-02	1	Fixed Resistor	22	851-0001	1	Washer, Lock - Spring (Brass) (#10)	
	305-0737	1	External Adjust	23	871-0010	2	Nut, Hex - Brass (#10-32)	
2			Standard (VRAS-2)	24	821-0005	5	Screw, Self-Locking - Hex Washer Head (#10-32 x 1/2")	
	301-3244	1	Bracket, Mounting - Relay	25	301-5150	1	Cover, Control	
	301-7334	1	One Socket Hole	26	301-6230	1	Box, Control	
3	307-1061	1	Two Socket Holes	27	-	1	Panel, Control (See Separate Page for Components)	
4	307-1157	3	Relay - Start (K11)	28	323-1137	1	Receptacle - Square Flange	
5			Spring, Holddown - Relay	29	323-1135	1	14 Pin (J2)	
			Monitor Assembly, Engine (Includes Replaceable Relay and Spring) (A11)	30	323-1229	11	16 Pin (J1)	
	300-2510	1	Two Light Monitoring System (Standard)	31	323-1193	4	Socket, Female - Used With 14 Pin Receptacle	
	300-2453-04	1	Nine Light Monitoring System		323-1194	12	Pin, Male - Used With 16 Pin Receptacle	
6	307-1157	1	Spring, Holddown - Relay		323-1193	4	16-12 Gauge Wire	
7	307-1687	1	Relay (A11K1)		323-1194	12	18-14 Gauge Wire	
8	812-0061	2	Screw, Machine - Round Head (#6-32 x 3/8")	32	323-1136	1	Plug - Circular	
9	854-0006	2	Washer, Lock - IT (#6)		323-1134	1	14 Pin (P2)	
10	860-0006	2	Nut, Hex (#6-32)		323-1192	4	16 Pin (P1)	
11	307-1061	1	Relay - Voltage Selector (K21)		323-1195	12	Socket, Female - Used With 16 Pin Plug	
12	307-1058	1	Relay - Run (K12)		33	323-1194	11	14-12 Gauge Wire
13	323-0804	1	Socket, Relay (K12)				18-14 Gauge Wire	
14	337-0049	1	Strap, Ground				Pin, Male - Used With 14 Pin Plug	
15	856-0008	2	Washer, Lock - EIT (5/16")					
16	508-0144	1	Grommet, Rubber (1" Hole)					

**Voltage Regulator Assembly
(VRA21)**



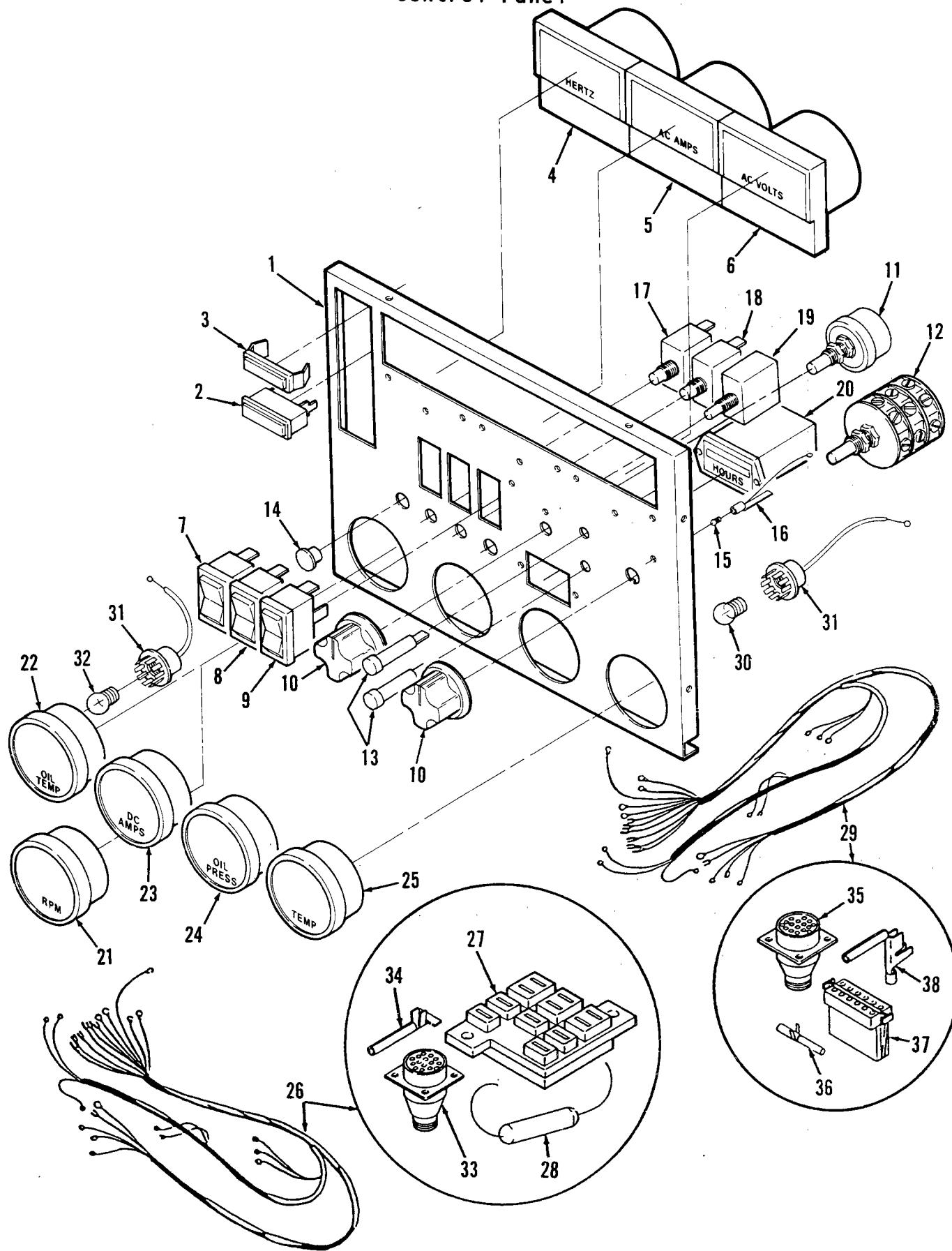
REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			Regulator Assembly, Voltage - Complete Standard	7	315-0343	1	Reactor - Used on Switching Voltage Regulator Assemblies (VRA21L22)
305-0693-01	1	1	Fixed Resistor	8	315-0343	1	Reactor (VRA21L21)
305-0693-02	1	1	External Adjust	9	332-0607	1	Block, Terminal (VRA21TB2)
305-0695-01	1	1	Switching Regulator	10	332-2373	1	Strip, Marker
305-0695-02	1	1	Fixed Resistor	11	332-2387	4	Terminal, Tab - Used on Standard Voltage Regulator Assemblies
1	338-1443	1	External Adjust	12	301-5736	1	Panel, Mounting
2	338-1670	1	Harness, Wiring	13			Screw, Machine - Round Head (#6-32 x 3/8")
			Standard Regulator	812-0061	4		Standard Voltage Regulator Assemblies
			Switching Regulator	812-0061	6		Switching Voltage Regulator Assemblies
2	321-0204	2	Board, Voltage Regulator (VR21)	14	870-0183	8	Nut, Self-Locking - Hex Head With ET Lockwasher (#6-32)
	332-2045	1	Standard Regulator (Includes Fuses)	15	812-0070	2	Screw, Machine - Round Head (#6-32 x 1-1/4") Used on Standard Voltage Regulator Assemblies
3	300-2409	1	Switching Regulator	16	812-0059	4	Screw, Machine - Round Head (#6-32 x 1/4")
3	321-0204	2	Fuse (1/4 Amp) Used With Standard Voltage Regulator Board (VR21F2, F3)	17	853-0003	4	Washer, Lock - ET (#6)
4	350-1190	1	Resistor - Fixed (1740 Ohms, 1/2 Watt) Used on Voltage Regulator Assemblies Without External Adjust (VRA21R21)	18	812-0065	2	Screw, Machine - Round Head (#6-32 x 5/8")
5	315-0431	1	Transformer (VRA21T21)				
6	305-0524	1	Bridge, Rectifier - Used on Standard Voltage Regulator Assemblies (VRA21CR21)				

**Voltage Regulator Assembly
(VRAS-2)**



REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
305-0737	1	1	Regulator Assembly, Voltage - Complete	6	332-0607	1	Block, Terminal (VRAS-2TB2)
1 301-9334	1	1	Panel, Mounting	7	812-0065	2	Screw, Machine - Round Head (#6-32 x 5/8")
2 812-0059	5	5	Screw, Machine - Round Head (#6-32 x 1/4")	8	870-0183	2	Nut, Self-Locking - Hex Head With ET Lockwasher (#6-32)
3 853-0003	5	5	Washer, Lock - ET (#6)	9	350-0394	1	Resistor - Fixed (2000 Ohms, 1/2 Watt) Used on Voltage Regulator Assemblies Without External Adjust (VRAS-2R21)
4 300-2880	1	1	Board, Voltage Regulator (VR21)				
5 332-2373	1	1	Strip, Marker				

Control Panel



Control Panel

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
1			Panel, Control	19			Breaker, Circuit - Field
			Panels Without AC Meters				Used With VRA21 Voltage
	301-7348-01	1	Panels With Three Round Gauge Holes	320-1138	1		Regulator Assembly
	301-7348-02	1	Panels With Four Round Gauge Holes	320-0530	1		3 Amp (Dual - CB3,CB4)
			Panels With AC Meters	320-1121	1		5 Amp (CB3)
	301-7349-01	1	Panels With Three Round Gauge Holes	20	302-0885	1	Used With VRAS-2 Voltage
	301-7349-02	1	Panels With Four Round Gauge Holes	21	302-1715	1	Regulator Assembly - 3 Amp (CB3)
2			Light, Indicator (14VDC)	22	193-0330	1	Meter, Time Totalizing (M4)
			Controls With Two Light Monitoring System	23	302-1402	1	Tachometer (Includes Socket and Lamp (M5)
	322-0238	1	RUN - Green (DS1)	24	193-0352	1	Gauge, Oil Temperature (M5)
	322-0128	1	FAULT - Red (DS2)	25	193-0351	1	Ammeter - DC (M1)
			Controls With Nine Light Monitoring System	26			Gauge, Oil Pressure (M2)
	322-0238	1	RUN - Green (DS1)				Gauge, Water Temperature (M3)
	322-0110	1	LO ENG TEMP - Red (DS2)	338-1642-03	1		Harness, Wiring - AC
	322-0109	1	HI ENG TEMP - Red (DS3)				(Includes Socket for K11 Start Relay, Receptacle and Sockets)
	322-0108	1	LO OIL PRES - Red (DS4)	338-1642-01	1		Controls Without AC Meters
	322-0111	1	OVERSPEED - Red (DS5)				All Except Voltage Code 9XR (Also Includes Resistor and Socket for K21 Voltage Selector Relay)
	322-0107	1	OVER CRANK - Red (DS6)				Voltage Code 9XR
	322-0240	1	PRE HI ENG TEMP - Amber (DS7)	27	323-0765	2	Socket, Relay (For K11,K21 Relays)
	322-0241	1	PRE LO OIL PRESS - Amber (DS8)	338-1642-04	1		Resistor, Fixed - 47K Ohm, 1/2 Watt (K21R22)
	322-0283	1	SWITCH OFF - Red (DS9)	28	350-0556	1	Harness, Wiring - DC
3	322-0141	7	Lens, Indicator Light (No Legend or Lamp) Controls With Two Light Monitoring System	29			(Includes Receptacle, Pins, Plug and Sockets, where required.)
4			Meter, Frequency - AC (M21)				Meters
	302-1273	1	50 Hertz	338-1643-01	1		Switches
	302-1153	1	60 Hertz	338-1644	1		Indicator Lights
5			Ammeter - AC (M23)				Controls With Two Light Monitoring System
	302-1620	1	Voltage Code 9XR	338-1646	1		Controls With Nine Light Monitoring System
			Voltage Code 15R, 515R	338-1645	1		Lamp, Pilot (DS10,DS11,DS12)
	302-1684	1	63.0 DL6TB	30	322-0308	3	Socket, Lamp
	302-1685	1	70.0 DL6TB	31	322-0210	4	Lamp, Pilot (DS13)
6			Voltmeter - AC (M22)	32	322-0004	1	Receptacle - Square Flange (14 Pin) (P2)
	302-1148	1	All Except Voltage Code 9XR	33	323-1137	1	Socket, Female
	302-1300	1	Voltage Code 9XR	34	323-1229	11	Used With 338-1642-01 Wiring Harness
7			Switch, Push (Remote, Stop, Start) (S10)	35	323-1135	1	Used With 338-1642-03 Wiring Harness
	308-0531	1	Controls With Two Light Monitoring System	36	323-1229	5	Used With 338-1642-04 Wiring Harness
			Controls With Nine Light Monitoring System	37	323-1229	10	Receptacle - Square Flange (16 Pin) (P1) Used With 338-1643-01 Wiring Harness
	308-0620	1	Standard	323-1193	3		Pin, Male - Used With 323-1137 Receptacle
	308-0624	1	Pennsylvania State Approved	323-1194	10		16-12 Gauge Wire
8	308-0533	1	Switch, Push - Pre Heat (S11)	37	323-0984	3	18-14 Gauge Wire
9	308-0532	1	Switch, Push - Lamp Test (S12)	38	323-0488	8	Plug, Connector (12 Pin) (J1, J2, J3) Used With 338-1643-01, 338-1644 and 338-1645 Wiring Harnesses
10	303-0032	2	Knob	323-0488	12	Socket, Male (Side Feed)	
11			Potentiometer - 25 Watt (R23)			Used With 338-1643-01	
	303-0170	1	Used With VRA21 Voltage Regulator Assembly With External Adjust	323-0488		Wiring Harness	
	303-0261	1	Used With VRAS-2 Voltage Regulator Assembly With External Adjust	323-0488		Used With 338-1644	
12	308-0284	1	Switch, Rotary - Voltmeter/Ammeter (S21)	323-0488		Wiring Harness	
13	322-0211	2	Light, Pilot (DS21,DS22)	323-0488		Used with 338-1645	
14	517-0132	1	Plug, Hole			Wiring Harness	
15	322-0203	2	Lamp (DS14,DS15)			Used With 338-1644	
16	322-0213	2	Lampholder			Wiring Harness	
17	320-1110	1	Breaker, Circuit - Remote - 7 Amp (CB1)			Used with 338-1645	
18	320-1110	1	Breaker, Circuit - Control - 7 Amp (CB2)			Wiring Harness	

Paint and Thread Sealant

REF NO.	PART NO.	QTY USED	PART DESCRIPTION
	525-0305	-	Paint, Green - Enamel (13 oz. Pressurized Spray Can)
	518-0452	-	Sealant, Thread (50 cc Bottle)